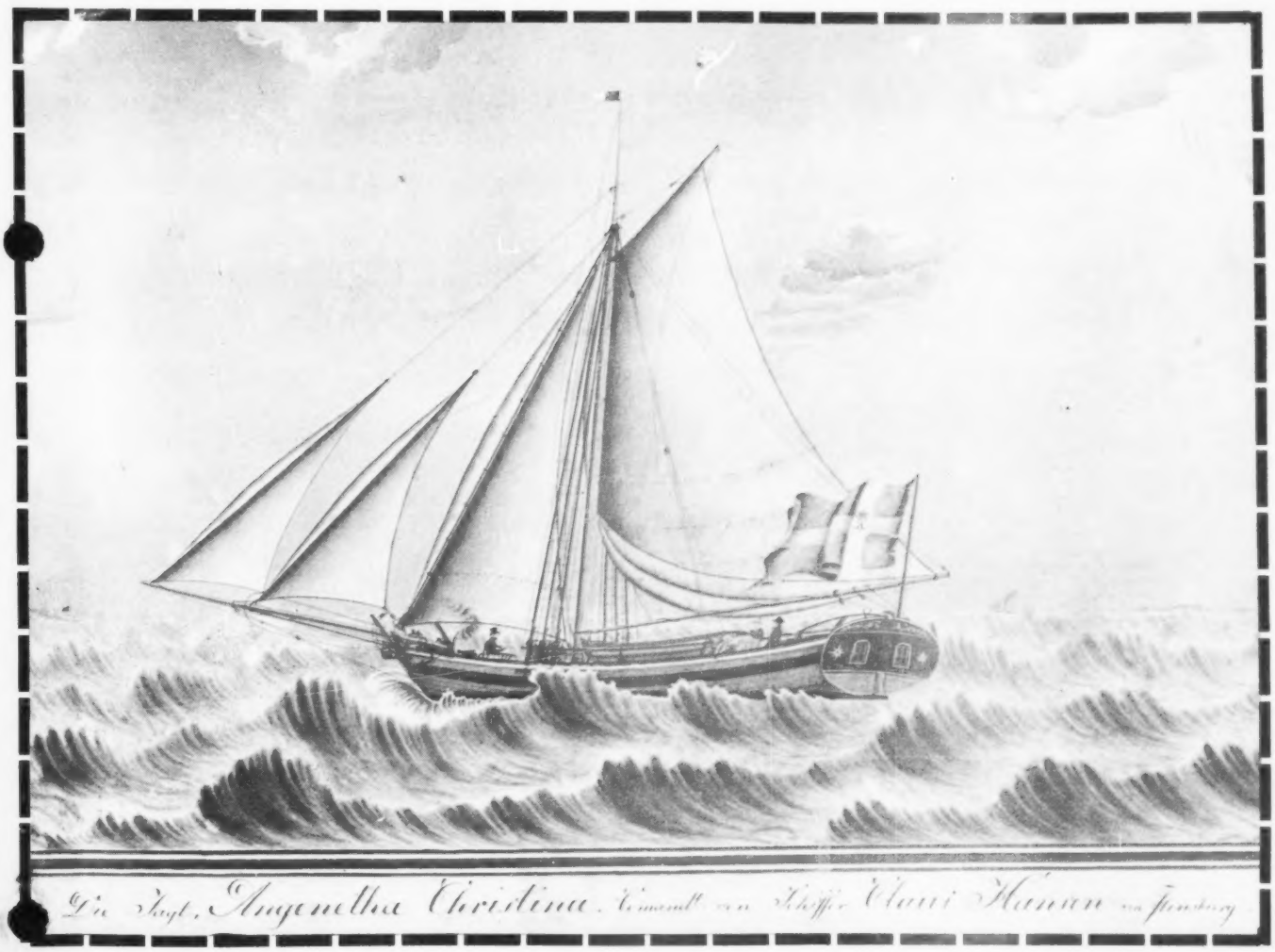
LODESTAR OF NEW YORK

NAUTICAL RESEARCH JOURNAL

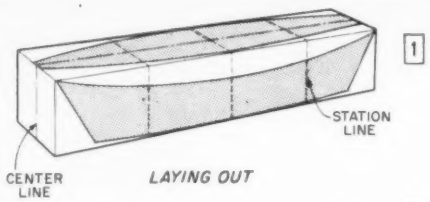
PUBLISHED BY THE NAUTICAL RESEARCH GUILD

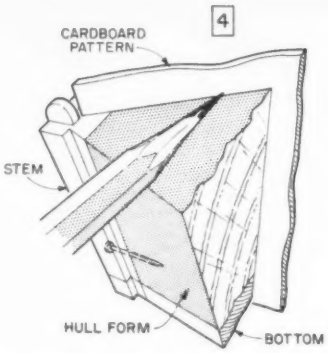
Secretary-Treasurer
JAMES W. HARBIN, JR.
4110 Beall Street
LANDOVER HILLS, MARYLAND

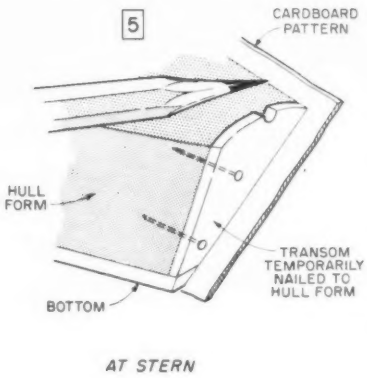
Vol. 10 No. 1



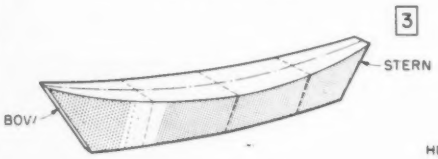
Eagle Carving - Courtesy of Richard Orr Ship Studio
Painting from the Collection of Karl F. Wede



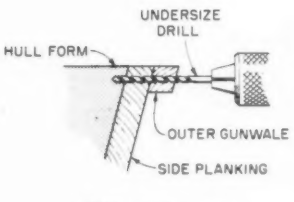


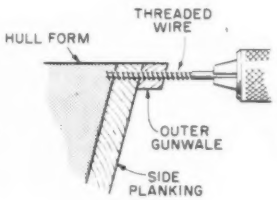


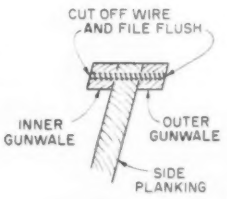
LAYING OUT PATTERN FOR SIDE PLANKING



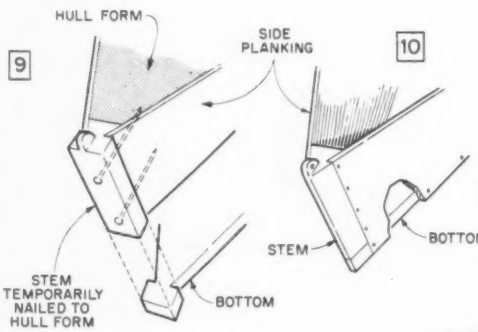
MAKING HULL FORM

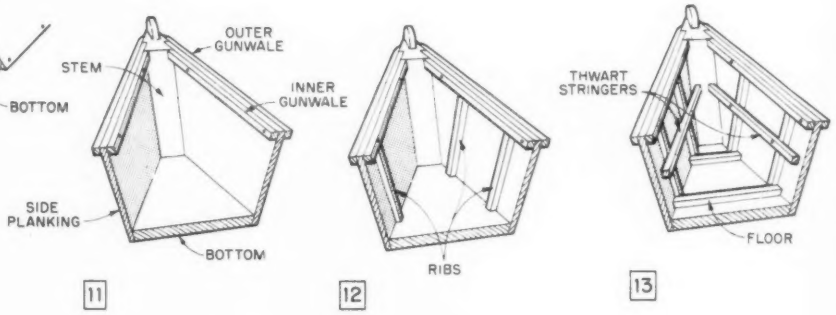




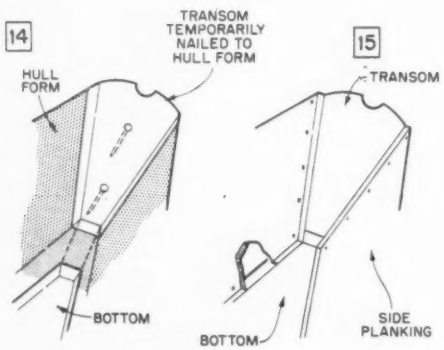


DETAIL OF THREADED WIRE FASTENINGS
(ENLARGED)





ADDING INTERIOR FITTINGS



MODEL DORY CONSTRUCTION

BY J. J. FLYNN

ILLUSTRATED BY ROY ROGERS

BUILDING A MODEL OF A DORY

By John J. Flynn

Illustration by Roy Rogers

Should a modeler be temporarily out of work and wondering what the next project will be, he might take fancy to building a model of a fisherman's Dory. I have built several of late and found the building of one a pleasant pastime. There was some mahogany veneer on hand, so that was the wood chosen for the job. The bottom, stem and transom as well as interior finish were also of this wood.

Start out with any block of wood that will measure to the inside dimensions and draw the necessary pencil lines, centers, stations, sheer and the rake of the stem and stern. The length of the block will have to be shortened to allow for the thickness of the transom and the stempost.

Cut the sheer after the end rake cuts have been made. Have a paper pattern of the outline of both the top and bottom of the block. In my case, I built to ½" scale and used a bottom piece 1/8" thick. This thickness was needed as there is a rocker bottom; the fore and aft ends rise 3". There will be a like hollow of 3", or 1/16" on the upper side of the bottom board, so make this allowance when shaping the block. Cut the curving and sloping sides and smooth down.

I made the stem out of a piece of 3/16" square stock, so there was a surface this wide on the stem end of the block. The transom was made of a piece 1/16" thick. Prepare the bottom piece to fit the bottom of the block and bevel the edges to conform to the slope of the sides of the block. Temporarily fasten the bottom piece to the block, bevel the lower edges of the stem and transom to fit true to the bottom and brad these pieces to the block. Beveling the edges of the transom when it is in place and cut a rabbet in the stem post thick enough for the siding material. In my case, the veneer was 1/32" thick.

Now make a paper pattern for the side that will be of one piece. Fit the side in the rabbet to the after side of the transom. If you are using a veneer that is dry, you will find it helps to moisten same to prevent breakage.

For fastenings, I used threaded #28 brass wire. Holes bored for the fastenings DO NOT HAVE TO BE TAPPED as the threads cut into the wood. "Duco" was also used in the rabbet. Start the fastenings where the side joins the rabbet, then along the bottom. To help hold the spring of the side in to the block, a cord may be drawn around them. Fasten along the bottom and up the transom.

When both sides are on, then draw the stem post to a point. The next step is to mount a rubbing streak or outer gunwale. These pieces should be fastened with Duco Cement and threaded wire. When the Duco had set, the wires were backed out so the boat could be removed from the block form. After this was done, the inner gunwales were put in place and fastened with both Duco and threaded wire through both members.

I put in 9 floor timbers and 9 sets of ribs, wire fastenings, then laid the flooring. The insides should be smoothed before the ribs are installed. Next step is to install the stringers that the thwarts rest on.

A piece of reinforcing extends across the inside of the transom where the rope strop comes through that is used for hoisting the dory aboard ship. A like strob will pass through a hole bored through the stem about 8" below the gunwale. Thole pins of wood are rather small for this scale, so I made them from brass wire set in small wooden blocks mounted on the gunwale, properly spaced from the thwart. Varnish the model, and there is your built-up DORY.

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THE DEVELOPMENT OF THE SMALL INSHORE PATROL BOATS OF THE UNITED STATES COAST GUARD

- William D. Wilkinson -

This is the second of four articles on the development and history of the United States Coast Guard's small, relatively high speed, inshore patrol boats between 65 and 95 feet in overall length. The first article covered the 74-footers ("six-bitters") of 1924-25 and the 78-footers ("400" boats) of 1931 and appeared in the September-October 1956 issue of the Journal.

* * * * * * *

Part II

The Depression Years

During the 1930's, the Coast Guard commissioned three new classes of small, fast inshore patrol boats which had been planned early in the decade as another phase in the ever shifting contest between law enforcement agencies and rum-running smugglers. First one side would have the swifter craft, then the other; the pendulum constantly swinging as each side made improvements. The steady progress in rum-running design was furthered considerably by the decline of the small independent operator and the appearance of a few large, powerful and wealthy syndicates commanding the resources to have planned and constructed the best boats available. At one stage during this period, the most successful boats utilized by the Coast Guard in law enforcement work were ex-"blackies" now used to capture their former associates. Just as the Service's 78-footers, the "400" boats, had superseded the older "six-bitters", it was becoming increasingly necessary to develop a faster cutter to succeed the 78-footers.

The type of vessel employed most successfully in the current "Twilight Fleet" on both East and West Coasts was usually between 72 and 85 feet in overall length, rather narrow in beam and low in freeboard and deckhouse structure to keep the silhouette as close to the horizon as possible. Very high powered, triple screw installations were quite common. The outer units would be converted Liberties, Italian Fiats, Wright Cyclones, Sterling Vikings or other similar engines capable of pushing a fine-lined, shallow-draft hull well over 30 knots for short fast runs. The center unit would be a lower powered engine - often diesel - providing all the speed necessary for normal operating conditions. However, when the Coast Guard came into view, on would go the outer units and in more cases than not, the Service cutter would soon be left behind. 1/

A 72-footer, equipped with a power plant similar to that just described, had operated quite successfully on Long Island waters but was finally seized by the Coast Guard which in turn put her to anti-smuggling work. What the Service learned from this boat, a particularly fine model, and others similar, greatly influenced the design specifications for the new cutters being contemplated.

Before the boats could be built, Prohibition came to an end with the repeal of the 18th Amendment in December 1933. 2/ This, of course, also ended the immediate need for allocating the Service substantial funds for new ship construction although much justification remained for their eventual completion. Repeal did not mean the end of all smuggling for as noted in the annual report of the Coast Guard for 1937,

the sharp decline in rum-running on all coasts immediately following repeal was reversed by renewed and considerable activity in 1934. The volume of narcotics entering the country illegally had also risen substantially and in the same annual report, it was stated that in Hawaii, the proverbial "Crossroads of the Pacific", running-in narcotics had become so extensive that a new Coast Guard Section at Honolulu had been established. During the next year, the Service's anti-narcotic smuggling organization was expanded to include the Puerto-Rico-Virgin Island area. In all Districts in the fiscal years 1937 through 1941, vessels suspected of carrying narcotics were picketed or trailed totaling 2,240, 4,430, 5,000, 4,199 and 3,595, respectively. 3/ Even today, one of the Coast Guard's primary responsibilities is preventing the illegal entry of narcotics, liquor, other contraband and aliens.

These proposed cutters also presented the possible answer to a new operational problem. The growth of civil, naval and military aviation, as well as the Coast Guard's own air arm, created the need for small, fast boats which could be used in air-rescue and crash boat work. With their high speed, maneuverability, uncluttered decks and low superstructure, the new boats would have many of the requisites for craft on such duty and Service officials wanted to explore their capabilities. From an engineering standpoint, the Service was also anxious to have the cutters completed; this was the first time they had available engine units providing so much power and speed for vessels of this category. Operational performance would be important in setting down future design specifications. With funds no longer available for additional construction, however, it would be almost two years after Prohibition's end before the Coast Guard was finally given the opportunity to complete original plans.

This opportunity came about through the advent of the worst depression in the nation's history. During President Roosevelt's first term, several moves were made to counteract the effects of an almost complete breakdown in the country's economy. Included was the passage of the Public Works Act and the Emergency Relief Appropriation Act under which funds were made available to revitalize depressed industries such as ship building, one of the worst hit. There were not only the problems of keeping firms in business and men employed but also that of retaining within the industry highly skilled shipwrights who, if lost through lack of employment, might be difficult, if not impossible to replace. This was especially true in the smaller ship building yards where principal business consisted of yachts, fishing craft and workboats.

By April 30, 1937, appropriations to the Coast Guard under this legislation amounted to $4,850,950. Out of this, over $700,000 was eventually absorbed in the construction of the 13 cutters comprising the three new classes covered in this chapter. For Service reasons and to further another of the legislative aims - the distribution of economic aid on a wide geographic basis, seven of the vessels were built on the East Coast, six on the West. The balance of the appropriations went into other small boat projects, developing and constructing shore facilities, dredging, expanding the Service's communications system and so forth. 4/

Bids for the new cutters were opened and awarded in the fall of 1935, and original plans called for completion of all the vessels during the last two months of 1936 and the first part of 1937. However, unsettled conditions of the period, particularly labor unrest, delayed progress as much as 10 to 11 months on the West Coast and four to eight on the East. A strike of yachtyard workers and the moving over into other building trades of many highly skilled boat carpenters and mechanics made progress particularly slow in the West. In many instances, shipments of parts and material were delayed by other strikes and threats of picketing.

Of the six vessels built on the West Coast, four were 80-footers and two, 65-footers. Harbor Boat Building Company, Terminal Island, California, won the contract to build the four 80-footers at a price of $37,985 per boat, the lowest of six yards bidding. 6/ The five similar cutters built on the East Coast were awarded to Gibbs Gas Engine Company, Jacksonville, Florida, on the lowest of 17 bids: $28,900 per vessel. 7/ William Whiting, Long Beach, California, was contracted to complete the two 65-footers, quoting a price of $27,400, the lowest of five yards bidding. The remaining two boats, both built on the East Coast, were 72-footers and contract for them went to Chance Marine Construction Company, Inc., Annapolis, Maryland, whose per vessel bid of $22,900 was the lowest of 14. 8/ Having the contractor name his own naval architect (with the approval of the Coast Guard) to develop hull lines, final design and construction specifications had worked out well with the 78-footers and was followed again with the new boats. Both West Coast firms selected D. M. Callis of Los Angeles as their architect while Eldredge-McInnis of Boston was selected by the two eastern builders. 9/

In concept and purpose, the 80-footers held the more direct lineage with the 74- and 78-footers than did the other two classes. The 80-footers also represented a transitional design for not only did they carry over the best features of the older cutters, they also incorporated several new design features (many learned from rum-runners as well as operational experience) which are being used successfully in contemporary cutters of the same type.

Basic hull lines were influenced by the 78-footers which had the same waterline length of 78'0" although the new boat, with but an inch more draft, had an 11½" wider beam. This, with the higher freeboard forward (resulting primarily from incorporating the forward bulwarks into the hull itself), gave a sharper bow with more flare and a somewhat finer entry. As the lines flowed aft, they hardened out more than on the older boats and were much flatter at the transom. In appearance, there was little to remind one of the 80-footer's predecessors; gone were the raised bulwarks and straight vertical stem of the "six-bitters" and "400" boats and a fresh, completely new hull profile was presented: a graceful unbroken sheerline and just a hint of a modified clipper bow. A pleasantly streamlined wheelhouse replaced the straight, angular structures of the earlier classes and mounted almost directly amidships was a compact, trimly raked stack, the first time such a structure had appeared on this type of cutter.

The wheelhouse incorporated a feature long wanted by the officers and men manning these small craft: a completely equipped flying bridge. On the older boats, the lack of such a facility made operations very difficult during heavy weather and poor visibility when course on a "rummy" had to be maintained solely from within the wheelhouse.

On each side of the stack, a door gave access to a hatch and companionway directly into the engine room. Also provided were two ventilating mechanisms: a forced-draft fresh air intake to the engine room and a forced air blower to exhaust hot air from the galley. The galley stove pipe was run through the stack also.

For the first time, all trunk cabins were absent and, with the exception of the very low wooden cover protecting the protruding tops of the gasoline tanks, the entire aft deck was clear. A 17-foot dory was carried on chocks mounted directly to the deck, similar to that arrangement on the 78-footer. This earlier boat had carried only one mast, however, and the new cutters went back to the two spar arrangement of the "six-bitters" - one mast mounted just aft the flying bridge; the other, on top of the forward edge of the wooden cover over the gas tanks.

The well-deck set in the bow was an interesting design innovation. It was planned to give the crew working forward a drier deck and permitted the development of an unbroken sheerline and greater flare forward. The anchors and windlass were carried here and mounted directly in the center was a one pounder, the cutter's principal armament. Unfortunately, the idea was a mixed blessing since in heavy weather, water was very apt to collect faster than the scuppers could remove it and the cutter's forward trim was thus thrown off. In winter the problem was particularly acute as the scuppers froze over and ice accumulated causing even more serious loss in trim and maneuverability.

As completed, the 80-footers built on both coasts had the following characteristics:

Length overall	80'9"
Length waterline	78'0"
Beam (outside planking)	15'7½"
Draft	4'0"
Displacement (at about 4'0" maximum draft with approximately 2000 gallons of fuel, 300 gallons of fresh water and 3000 pounds of stores)	51.7 long tons

Following are the construction scantlings which, specifications stipulated, had to obtain the same strength, rigidity and durability as the 78-footers:

	East Coast 80-Footers	West Coast 80-Footers
Stem - White Oak	5-3/4" sided	5-3/4" sided
Keel - East: White Oak	5-3/4" sided	
West: Douglas Fir		5-3/4" sided
Frames - White Oak (steam bent) Every other frame in engine room and every fourth frame fore and aft engine room a web frame. All frames spaced 12" on centers.	2-1/8"x2-1/8"	2-1/8"x2-1/8"
Hull Planking (single planked) - East: Yellow Pine	1-5/16"	
West: Douglas Fir		1-3/8"
Deck Beams - Main - White Oak	2½" x 3"	2-1/8"x3"
Auxiliary - White Oak	1¾" x 3"	1¾" x 3"
Half - White Oak	1¾" x 3"	1¾" x 3"
Main Deck Planking - Inner - East: Douglas Fir	½" x 5¼"	
West: Port Orford Cedar		½" x 5¼"
Outer - Douglas Fir	7/8"x2-5/8"	7/8"x2-5/8"
Transom - Inner - East: Yellow Pine	½"	
West: Port Orford Cedar		½"
Outer - East: Yellow Pine	7/8"	
West: Philippine Mahogany		7/8"
Stringers (3 per side) - East: Yellow Pine	1½" x 6"	
West: Douglas Fir		1½" x 7"
Guards - Main - East: Yellow Pine	3½" x 2½"	
West: Douglas Fir		3½" x 3"
Lower - East: Yellow Pine	2" x 3¼"	
West: Douglas Fir		2" x 3"
Watertight Bulkheads - 7 - galvanized wrought iron	12 USS gauge	12 USS gauge
Wheelhouse - Silicon Bronze	14 USS gauge	14 USS gauge
Wheelhouse Windows	10	10
Airports - Hull (7" diameter)	22	22

A significant design feature of the 80-footers was the propulsion units. Operational demands required a high speed engine of not too great weight in relation to the boat's size and the speeds desired, and in spite of the fire hazard, high cost of operating and limited cruising range, gasoline engines were selected. Diesels combining high speed with light weight, in common use today, had not then been sufficiently developed. This was the Coast Guard's first opportunity to make use of a very high speed engine at a cost not prohibitive. The Vimalert Company, Ltd., Jersey City, New Jersey, had developed a marine conversion of the Liberty 12 cylinder airplane engine of World War I fame known as the Vimalert M-12. Except for basic parts, few of the Liberty's original features remained in the converted engines as Vimalert either developed and produced in its own shop or purchased from subcontractors special reverse and reduction gears, reverse gear housing, water-cooled exhaust manifolds, modified cylinder walls, water pumps, marine-type generators, starters, oil coolers and filters, oil and fuel pumps, pistons and piston rings, valves and valve springs, camshaft, flywheel, ignition system and many other parts and accessories. Two oppositely rotated M-12 engines (each producing 400 hp), driving through a common transmission with 1.343 to 1 reduction gears, reverse gears and clutch, were mounted on longitudinal steel girders to form a Vimalert Duplex Unit. 10/

Each 80-footer's propulsion plant consisted of two Duplex Units which produced a total of 1600 hp at 1900 rpm, and the cutters on both coasts achieved a top speed of almost 30 statute miles per hour on trial runs. Complete performance figures were:

Fuel capacity	1900 gallons
Speed, maximum	25.87 knots
Economical cruising speed	11.3 knots
Cruising radius, full speed	289.6 nautical miles
Cruising radius, maximum (using economical cruising speed of 11 knots on two engines at 900 rpm)	703.7 nautical miles
Fuel per nautical mile, at 11 knots	2.65 gallons
Fuel per nautical mile, full speed	6.65 gallons

It was intended that for normal cruising, two engines would be used to give a speed of about 11 knots. Rescue work was planned for about 20 knots using four engines and top speed to be used only in emergency. This installation allowed the commanding officer considerable latitude in choosing power requirements for economical fuel consumption yet still provided the necessary speed operational circumstances might demand.

As the Vimalert-Liberty conversions required exceptional care on the part of engine room personnel, both in operations and maintenance, the manufacturer established a special school of instruction at its Jersey City plant to train Coast Guard machinists mates designated for the new cutters. Eighteen men were sent to the school and subsequently assigned not only to the 80-footers but also to the 65- and 72-footers which had similar engine installations. As a result of good specialized training of selected personnel, the Service had little operational difficulty with the engine units in spite of their complicated nature.

Final costs of the 80-footers when completed with engines and other equipment installed were as follows: 11/

	East Coast (per cutter) a	West Coast (per cutter) b
Hull	$28,900	$36,250
Hull changes	1,740	1,060
Main propelling machinery (4 engines)	18,000	18,000
Generator	575	575
Machinery changes (main engines and generators)	1,435	1,435
Cost of installation of all machinery, accessories and equipment	3,400	3,650
	$54,050*	$60,970*

a. Includes $2,000 of machinery accessories and equipment furnished by the builder.

b. Includes $2,500 of machinery accessories and equipment furnished by the builder.

* Excludes cost of radio and ordnance equipment and supplies which were furnished by the Government.

Total cost for all nine cutters came to approximately $514,130 with an average per vessel cost of $57,126.

Upon completing satisfactory trial runs and acceptance by the Service, each 80-footer was commissioned and assigned to its first station on the dates shown below:

A. New York Division: Base Four, New London, Conn.
   1. CG-406 March 10, 1937
   2. CG-407 April 22, 1937
   3. CG-408 May 12, 1937

B. Boston Division: Massachusetts Inshore Patrol Force, Commercial Wharf, Boston.
   4. CG-409 June 2, 1937
   5. CG-410 June 24, 1937

C. San Francisco Division:
   6. CG-411 October 4, 1937 (San Pedro, Calif.)
   7. CG-412 November 6, 1937 (San Francisco, Calif.)

D. Seattle Division:
   8. CG-413 November 24, 1937 (Bellingham, Wash.)
   9. CG-414 December 23, 1937 (Port Angeles, Wash.)

Except for a few temporary assignments elsewhere, the CG-406, 407 and 408 worked out of Base Four on Captain of the Port duty, 12/ search and rescue, customs and often, patrolling the great Eastern yacht regattas of that period. Only a few months after arriving at New London, the CG-407 escorted the New York Yacht Club cruise to Marblehead in August 1937. During the famous September 1938 hurricane, the CG-406 was slight damaged but otherwise the three cutters had relatively uneventful careers at this base, and in September 1940 all three were permanently transferred to New York for Captain of the Port duty there.

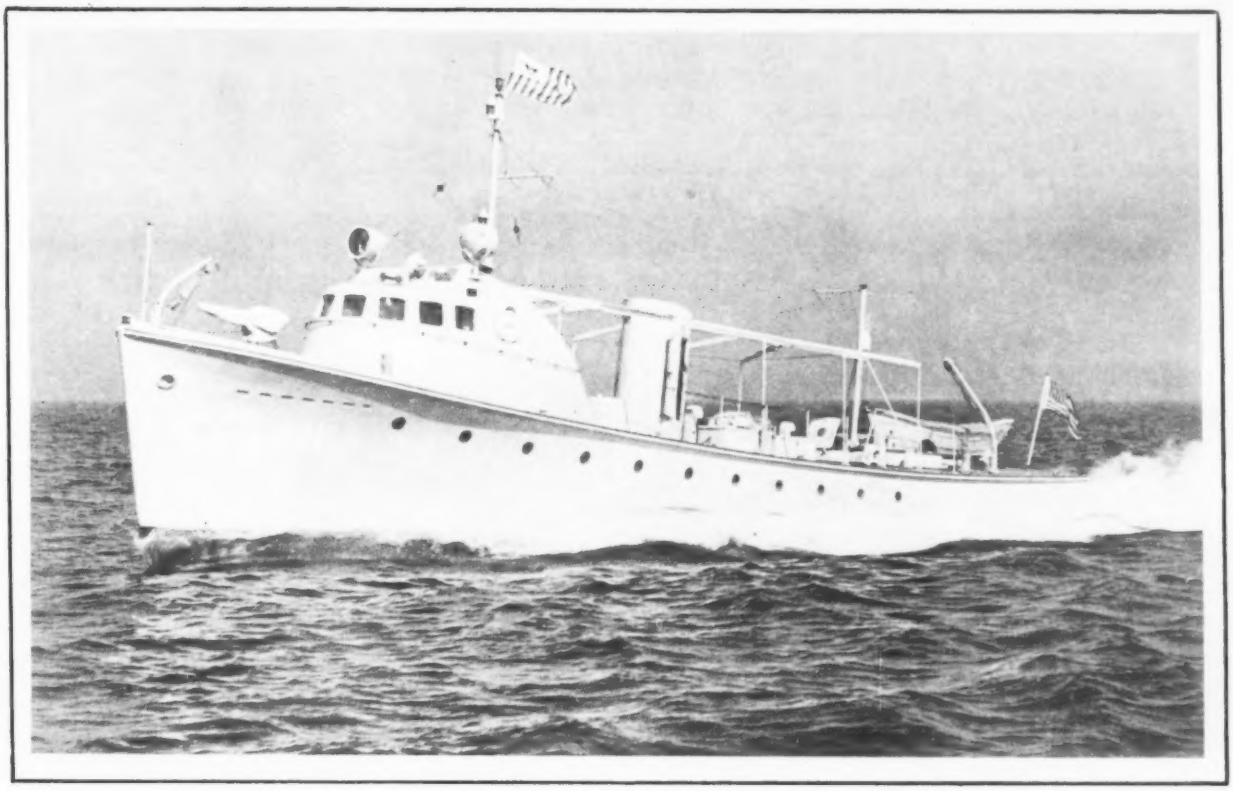
These 80-footers and all other vessels of the Coast Guard went under the operational control of the United States Navy on November 1, 1941. Armament was then substantially increased with the old one pounder being replaced by a 20 mm anti-aircraft gun which, with two ready ammunition boxes, was mounted astern, just forward of two depth racks, each equipped to carry two charges. Two anti-submarine projectors ("Mousetraps") for firing eight rocket projectiles were mounted in the well-deck forward and ready boxes for storing 7.2 rockets were added just aft the stack. 13/ Sound gear with a chemical recorder and an SO2 Radar unit were installed along with other electronic and communication equipment. The 17-foot dory, removed to make way for depth charge racks and the 20 mm, was replaced by a life raft mounted on the side rails, almost amidships, both port and starboard.

Equipped with this new armament, CG-406, 407 and 408 performed not only port security and law enforcement work but, until Spring 1943, participated in many of the Inshore Ship Lane Patrol convoys carried out along that part of the eastern coastline for which the Third Naval District was responsible. However, as in the case of the "400" boats, the 80-footers had their drawbacks when it came to such assignments. Their extreme high speed and the use of gasoline engines resulted in relatively low cruising radius which prevented them from effectively engaging in long patrols. Secondly, they had been planned as anti-smuggling cutters and it had not been intended to keep them offshore for extended periods of time. The long cruises in all types of weather required in anti-submarine convoy resulted in unsatisfactory living conditions and considerable discomfort for the crews.

In April 1943, the three vessels were transferred to the Ninth Naval District at Chicago for carrier plane guard duty. All anti-submarine armament was removed for this duty, a type of work which more effectively utilized the cutters' design advantages. Operating out of the Coast Guard Pier in Chicago, they patrolled with the Navy Carrier Qualification Units USS SABLE and USS WOLVERINE, both former Great Lakes steamers converted into small training carriers for the instruction of cadets in carrier deck landing techniques. Replaced by the new 83-footers in late October 1943, the 80-footers left Chicago for the Coast Guard yard at Curtis Bay, Maryland, arriving there November 17. After a complete overhauling, the three boats finally went in different directions in mid-March 1944: CG-406 to New York; CG-407 to Groton, Connecticut, and CG-408 to New Smyrna, Florida, all assigned to Port Security duty.

On December 18, 1944, CG-406 departed New York for Rockland, Maine, to participate in one of the Coast Guard's most interesting technical research projects of World War II: the coordination of research and equipment development for air-sea rescue operations. 14/ In February 1944, the Joint Chiefs of Staff had requested the Secretary of the Navy to set up, in the Coast Guard, an agency to coordinate technical efforts being made in this field by the Army, Army Air Corps, Navy (Bureau of Aeronautics) and the Coast Guard. Subsequently, the Coast Guard's Office of Engineering, Division of Naval Engineering, established a unit known officially as the Air-Sea Rescue Boat Testing Detachment. The unit was assigned the task of carrying out actual tests, preparing reports on the tests and recommending design specifications for future boats performing this type of duty. Vessels used in air-sea rescue work in every branch of the service were extensively evaluated in all types of climate and weather conditions from the sub-arctic to the tropics. Officers and men from all the military branches concerned, as well as many civilian personnel, were assigned to the project which ran from October 1944 to August 1945.

The Coast Guard Operating Base at Rockland was selected as the northern testing center and Key West, Florida for the southern. Actual testing was completed at Rockland by March 1945, and the unit moved south to finish the tests in tropical waters



CG-411, later CG-80305, from Port Bow. U.S. Coast Guard Photo

CG-411, later CG-80305, from the Starboard Quarter. U.S. Coast Guard Photo

CG-80300, ex CG-406, from the Starboard Bow. USCG Photo

CG-80300, ex CG-406, from Starboard Quarter. USCG Photo

which was done by mid-July. Reports and evaluations were then made, and the unit disbanded on August 15, 1945.

CG-406 participated in both the northern and southern tests after which she returned to her routine duties at New York. She remained there until decommissioned in November 1945, when she was sold out of the Service for $1,600. In the Register of Merchant Vessels she is listed as still in use and being operated as a passenger vessel under the name of STAR DUST, No. 253973, owned by Charles Eckerson of Perth Amboy, New Jersey. 15/

CG-407 finished up the war with 21 months of duty at the Coast Guard Training Station, Groton. She then returned to Curtis Bay in November 1945 and was decommissioned the 15th of that month. It appears that no record is available of her history since the time she was sold by the government.

CG-408 spent her last 18 months in service at New Smyrna and Miami as a general duty and air-sea rescue patrol boat, operating with the CG-409 and CG-410. In the fall of 1945, she returned to Curtis Bay and was decommissioned October 26, 1945. In the 1955 Register she was listed as owned by Gribble Marine Service, Houston, Texas, used in miscellaneous duty; however, the 1956 edition states that she burned at the entrance of Brazos Santiago Pass, Texas, on November 18, 1954.

Upon commissioning in 1937, CG-409 and CG-410 were assigned to the Boston Division to operate with the Massachusetts Inshore Patrol Force out of Commercial Wharf in Boston, although, until April 1940, CG-410 actually worked out of Rockland, Maine. The CG-409 was used by the Race Committee of the last International Fishermen's Cup Race between the famous Grand Banks fishing schooners BLUENOSE and GERTRUDE L. THEBAUD in October 1938 off Gloucester. Aboard the boat, serving as a member of the committee, was Walter McInnis, the ship's designer.

Both CG-409 and CG-410 spent most of 1943 serving under the Commander, Tenth Fleet, US Navy at the Naval Operating Base, Newport, Rhode Island. In February 1944, the boats were reassigned to the Seventh Naval District and as previously mentioned, spent the balance of their service time operating with CG-408 on general duty and air-sea rescue work out of Miami. For this work all three cutters were relieved of their anti-submarine equipment: depth charges, racks, mousetraps, etc. In October 1945, both the CG-409 and CG-410 returned to Curtis Bay for decommissioning on October 26 and November 29, respectively. Although no postwar history of the CG-410 can be found, CG-409 has had a useful career since being sold out of the Service to the Port Clyde Packing Company, Inc., Port Clyde Maine and renamed DELCA, No. 254996.

Repowered in 1948 with twin 165 horsepower General Motor diesels, she can do a good 14 knots in her work as a freight boat carrying herring from the seiners to the packing factory. The hull has been remodeled some for her new duties, enabling her to accommodate as much as 1,200 bushels of sardines. Now almost 20 years old, the ex-cutter is still in fine condition and considered an excellent sea boat by her owners.

Out on the West Coast, CG-411 and CG-412, upon commissioning, were assigned to the San Francisco Division and operated out of San Pedro and San Francisco, respectively. An interesting episode occurred in the CG-411's career in April 1938 when she cruised around San Pedro harbor with a battery of radio commentators aboard who were describing on a nationwide hook-up the return of the United States Fleet from its Pacific cruise. After the war began, the vessel was assigned to work with the Navy in the Eleventh Naval District under the Commander of the Western Sea

Frontier. Most of this duty was port security work out of Wilmington and San Pedro where, on September 7, 1945, she was turned over to the Coast Guard Repair Base for decomissioning on October 10. Since being sold out of the Service, the ex-CG-411 has had several owners, the latest of whom is Mr. Francis R. Shuh of Los Angeles, California, who purchased her in October 1956 from Mr. Allen Guiberson, Dallas, Texas. Although her current activities are not known, she was named ESTERINA, No. 255493, while owned by Mr. Guiberson and used as a yacht.

CG-412 operated out of San Francisco until the beginning of the war when she was assigned to Avila, California for operations with Naval Patrol Squadron No. 5 of the Western Sea Frontier. She was transferred from this duty to the Twelfth Naval District at San Francisco in April 1944 where she served until September 1945, when returned to Coast Guard duty. Decommissioned on October 25, 1945 at the Alameda Coast Guard Base, the vessel remained in storage until sold from the service on September 26, 1947. At the present time she is operating out of San Diego as a tuna boat named PRETTY PENNY, No. 255237 owned by Howard Pernula. As a fisherman she has a top speed of about 10 knots provided by twin 6-71 Gray Marine diesels with 3 to 1 Twin Disc reduction gears. Remodeled to include a 60 ton refrigerated hold, she is an excellent sea boat, dry in the roughest of seas, according to her captain.

Upon joining the Service, CG-413 and CG-414 were assigned to the Seattle Division for operations out of Bellingham and Port Angeles, respectively. CG-413 was in Bellingham until March 1943 when transferred to the Naval Section Base at Port Angeles. Thirteen days later, while on night patrol, she suffered serious bow damage in collission with the fishing boat FAVORITE NIGHT, necessitating repairs of $2,500. On April 24, 1944, CG-413 went to the Thirteenth Naval District for four months' naval patrol duty out of Seattle, returning on September 12 to Coast Guard duty at the Service's Port Angeles Operating Base. On January 28, 1945, the ship was sent to the Harbor Island Operating Base in Seattle where she spent the rest of her service career on Captain of the Port detail. On December 10, 1945, she was decommissioned at the Coast Guard Repair Base, Bellevue, Washington and put up for disposal. After having had several owners, the ex-CG-413 was purchased by the Yukon River Fishermen Cooperative Association, Inc. of Seattle for use as a freight boat. The soundness of the 80-footer's basic design was once again well proven for during the summer of 1955, this relatively small boat transported a load of freight from Seattle via Kodiak into the mouth of the Yukon River and upstream about 100 miles. Loaded down with canned salmon, she made the return trip of 3,000 miles directly across treacherous open waters of the Gulf of Alaska from Dutch Harbor to Seattle, a route usually taken only by large ocean-going vessels. The confidence her captain and crew of three Eskimos showed in the ex-patrol boat was well justified for on this trip they ran into very bad weather but came through without a mishap. The boat, named SILVER SPRAY, No. 250538 while owned by the Association, has subsequently been sold to "Doc" Freeman of Seattle.

CG-414 worked from Port Angeles until October 6, 1943 when she transferred to the Navy Section Base at the same harbor for patrol duty with CG-413. This duty continued until March 17, 1944 when she was sent to the Coast Guard Station at Hammond, Oregon. There she operated with the Navy on aircraft rescue and patrol work, but after only one month, she went back to the Thirteenth Naval District at Seattle where CG-413 had also been sent. In August 1944, the vessel went into dry-dock at the local Coast Guard Repair Base for a complete overhaul prior to reassignment in November when she was attached to the Service's Operating Base at Everett, Washington. CG-414 patrolled out of Everett for about a year until decommissioned December 10, 1945. Sold from the Service in 1946 to "Doc" Harvey of Seattle, she was converted by him into the pleasure yacht BLACK HAWK, No. 250879. At that time her Vimalert Duplex Units were replaced by Chrysler Royal gasoline engines. In 1948, the boat was purchased by George Schnabel who later, in 1950, cruised her for three

months in the waters off southeastern Alaska. In November 1950, the ex-cutter was sold again; this time to L. Evert Landon of Tacoma who renamed her LANDMARK. Twin 185 horsepower GM 6-71 diesels replaced the Chrysler Royals, giving a top speed of 12½ to 13 knots with a cruising speed of 11. Below decks she was rebuilt forward of the engine room to provide quarters for eight. On the main deck, the original wheelhouse was retained and a yacht-type superstructure with galley, main lounge and one stateroom were added. In 1952, Mr. Landon and twelve others also made a very successful cruise to Alaska. Mr. Sidney A. Crossley, Newport Beach, California purchased LANDMARK in November 1956. She was sailed down the coast to her new home port in some very rough weather but once again, demonstrated the seaworthiness of her class as a blue water boat. Although now somewhat narrow in beam for the heavier superstructure, which results in a slower roll period, more heeling on turns and some yawing in following seas, LANDMARK still handles well and takes head-on seas admirably.

In a somewhat special category were the 65-and 72-footers. Their development might be said to parallel that of the 80-footers although, as previously mentioned, the larger boats had the more direct relationship from a design standpoint to the earlier 74- and 78-footers and the cutters which were to come later. The two 65- and two 72-footers were basically day boats, the crews of which were to be billeted ashore. Headquarters, in preparing specifications for the classes, indicated that the following points had design priority:

1. Speed, seaworthiness, cruising radius and reliability to be essential characteristics;

2. Twin screw propulsion with provision for removing, as a whole, the Vimalert Duplex Units;

3. A minimum of radio apparatus to be carried;

4. Armament to consist of one machine gun mounted forward;

5. Supplies and spare parts to be stored at shore operating bases;

6. Other than as a haven from inclement weather, no provision to be made for crews' accommodations since berthing and messing facilities to be taken care of at shore stations.

Outwardly, the 65- and 72-footers appeared to be smaller editions of the 80-footers since from a distance, the only distinguishable characteristic of the shorter boats was the omission of the stack amidship. It had been planned originally to build all four of the smaller cutters on a 65-foot length; however Walter McInnis, naval architect for Chance Marine Construction Company (one of the two yards constructing the 65-footers), felt it would be impossible to obtain the speed desired by Coast Guard Headquarters without extending the waterline length. As a result, he prevailed upon Service officials to approve a modification in specifications allowing for a seven-foot extension in both waterline and overall length. This was a well justified change for the 72-footers turned out to be the fastest of all these new boats, and these boats -- the 65-, 72- and 80-footers -- still hold the speed records for their type of vessel within the Service. Due to the changes instituted by Mr. McInnis, therefore, three classes of cutters resulted instead of two, as originally planned. Following are the final characteristics of the two smaller classes:

	65-Footers	72-Footers
Length overall	65'0"	72'0"
Length between perpendiculars	63'0"	70'0"
Beam (moulded)	14'1"	14'1½"
Depth, amidships	8'11"	8'3"
Draft, maximum	3'9"	3'9"
Displacement (at about 3'9" mean draft with approximately 1500 gallons of fuel and 500 pounds of stores)	26.34 long tons	27.18 long tons

Principal construction scantlings were as follows:

	65-Footers	72-Footers
Stem - White Oak	4"	4½"
Keel - 65's: Douglas Fir; 72's: White Oak	5"	4½"
Frames - White Oak (steam bent)	1-7/8"x 1-7/8"	1-5/8"x1-5/8"
Every other frame in engine room and every fourth frame fore and aft engine room, a web frame. Frames spaced on centers	12"	9"
Hull Planking - Inner - Cedar	½"	5/16"
Outer - Philippine Mahogany	3/4"	3/4"
Deck Beams - Main - White Oak	1-7/8" x 2"	1-7/8"x 2-7/8"
Half - White Oak	1½" x 3"	1¼"x 2-3/4"
Main Deck Planking - Inner - 65's: Cedar	3/8" x 4½"	
72's: Douglas Fir		5/16" x 5"
Outer - Douglas Fir	3/4" x 2¼"	1-3/16"x2½"
Transom - Inner - Douglas Fir	1/2"	3/8"
Outer - Philippine Mahogany	7/8"	3/4"
Stringers (3 per side) - Douglas Fir	1-3/8" x 6"	1-3/8" x 5½"
Guards - Main - Yellow Pine	3" x 2-1/2"	3" x 2-1/2"
Lower - Yellow Pine	2" x 3"	2" x 3"
Watertight Bulkheads - 65's: 4 - Wrought Iron	12 gauge	
72's: 6 - White Pine		7/16" double
Wheelhouse - 65's: Silicon Bronze	14 gauge	
72's: Sides - Double Planked Mahogany		
Inner		3/8"
Outer		5/8"
Top - Double Planked Mahogany		3/8" x 2" each
Wheelhouse Windows	6	8
Air ports - Hull (65's: 7" diameter)	14	
(72's: 6" diameter)		14

With respect to hull lines designed for obtaining a high speed, these smaller cutters had even more finely developed lines than the 80-footers. Semi-round bottomed, they had particularly sharp entries forward with substantial bow flare. Aft amidship, the hulls became hard-chined and Vee-bottomed. The bottom aft, particularly on the 72-footers, developed somewhat of a concavity and the tumblehome at the transom was quite pronounced. Hulls were strong, rigid and durable to withstand the stresses and strains encountered during normal operations by boats such as these, so powerfully engined for their size.

Engine installations on the 65- and 72-footers were similar to the 80-footers' with the same number of personnel required to maintain them: one chief motor machinist's mate and two motor machinist's mates, first class. Each of the cutters

in the smaller classes had a total crew of six, however, as compared to ten on the 80-footers.

Speed trials of CG-442, the first of the two 65-footers completed, were held on the open waters of the Pacific off San Pedro on July 12, 1937. Trials of the first 72-footer, CG-440, were held on the Chesapeake April 22, 1937. 16/ The results of these tests are shown below:

65-Footer, CG-442			72-Footer, CG-440		
RPM	NMPH	STMPH	RPM	NMPH	STMPH
1000	13.24	15.24			
1200	17.18	19.80			
1500	24.00	27.65	1300	21.07	24.25
1700	26.83	30.91			
1900	27.74	31.96	1900	29.47	33.95

The 72-footer was able to go from full speed ahead to dead in the water in 33½ seconds. At approximately 13 knots, the 65-footer had a cruising range of 640 nautical miles; at about 30 knots, 263 miles.

The following listing compares the costs of the completed cutters:

	65-Footers	72-Footers
Hull	$27,843.31*	$24,601.14
Hull changes	590.00	2,798.80**
Machinery (propelling)	18,000.00	18,000.00
Machinery changes	1,240.00	1,240.00
Generator (including changes)	179.00	179.00
Installation of all machinery accessories and equipment	1,263.00	1,263.00
	$49,115.31	$48,081.94

* Includes accessories and equipment of $2,858 provided by the builder.

** Higher cost of hull changes for the 72-footers was, of course, attributable to basic design changes increasing the overall length.

Total cost of the 65-footers: $98,230.62; of the 72-footers: $96,163.88; of all four cutters: $194,394.50

The builders' trials successfully completed, the four vessels were commissioned on the following dates: 17/

72-Footers		65-Footers	
CG-440	April 29, 1937	CG-442	August 2, 1937
CG-441	May 9, 1937	CG-443	August 31, 1937

When CG-440 joined the Service, she was assigned to Base Six, Jacksonville Division and stationed at Fort Lauderdale where one of her primary duties was patrolling against the illegal entry of narcotics. Air-sea rescue work came next when in the Fall of 1937, the vessel was transferred to the Coast Guard Station at Cape May, New Jersey. In January 1939, she was sent South again -- to Norfolk, Virginia, for operations under the Captain of the Port. On September 14, 1944, the

vessel was badly damaged when winds of hurricane force parted her lines and she was battered against a pier by heavy seas. The minimum estimate of repairs was $15,000 and as this was considered uneconomical, the boat was removed from active duty and replaced by one of the newer 64-footers, developed by the Navy. In December, she was laid up in storage at the Great Bridge (Virginia) Coast Guard moorings, and on June 5, 1945, CG-440 was sold from the Service for $527.80. S. T. Taylor of White Stone, Virginia, was the purchaser but no subsequent record of her history has been obtainable.

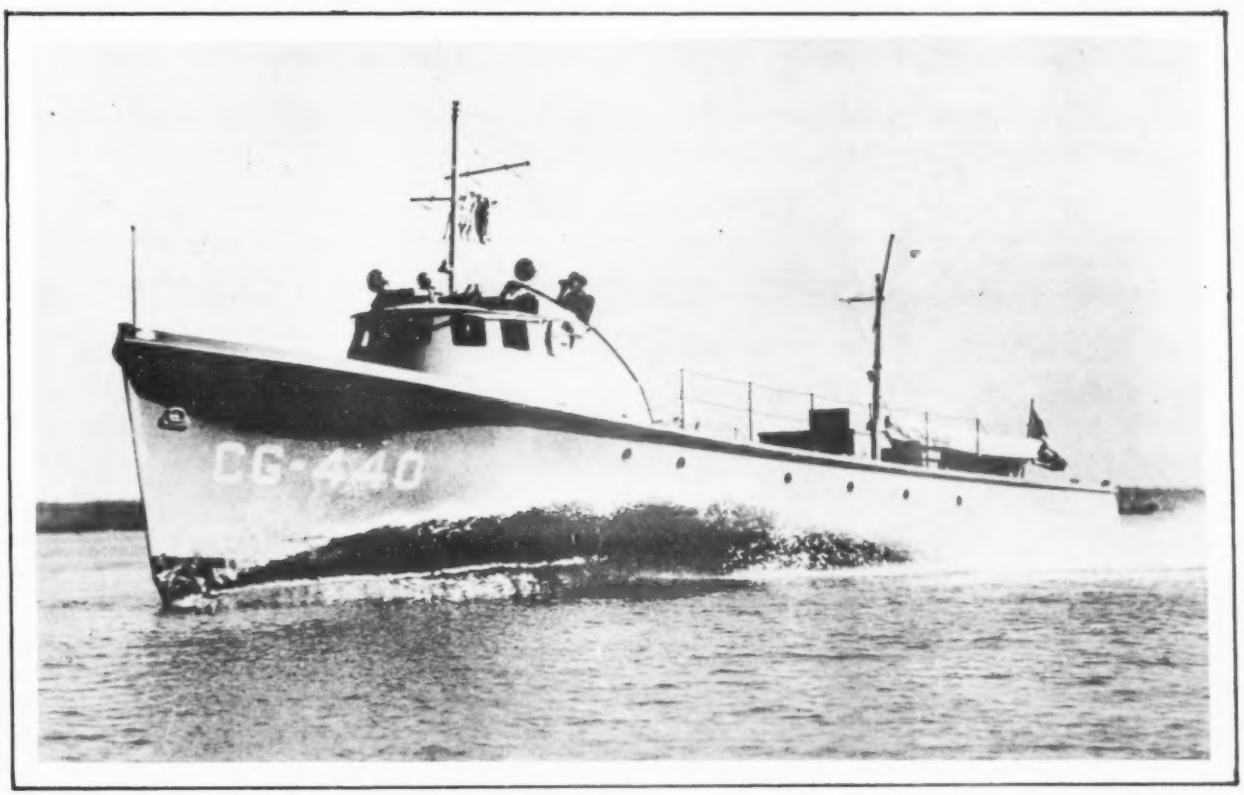
After commissioning, CG-441 followed her sister ship on assignment: First to Fort Lauderdale; then in October 1937 to Cape May and finally, in January 1939, to Norfolk. She remained in the Hampton Roads area throughout the war and in September 1946 was decommissioned and put in storage at the Service moorings in Berkley, Virginia. On November 14, 1947, the vessel was sold from the Service for $3,200 to Capt. B. L. Raymond of West Palm Beach, Florida who has since converted her into a sport fishing cruiser for charter work. He renamed her LEV-LOU, No. 256395; had her overall length reduced to 64'11" by cutting back the stern, and repowered her with twin 200 hp GM 6-71 diesels. These give a cruising speed of 10 knots, at which fuel consumption is about 12 gallons per hour, and a top speed of 18 knots, when hourly consumption jumps to 30 gallons. The boat is still in excellent operating condition for this type of work and Capt. Raymond speaks highly of her seaworthiness and sound construction.

The CG-442's first assignment was in the San Francisco Division, at San Pedro Air Station where she remained until well into the war. In November 1943, she was transferred to the Coast Guard Base at Los Angeles for Captain of the Port duty operating out of Wilmington and in October 1945 was shifted to general duty at San Pedro Repair Base. She operated there until decommissioned April 29, 1947 at which time she was put into storage at the Kennydale (Washington) moorings. On September 22, 1947, CG-442 was sold for $2,500 to William L. Yager, Los Angeles, California. Now named SEADATE, No. 267957, she is owned by Richard H. Crank of Lomita, California who employs her for fishing.

On September 9, 1937, CG-443 left the Whiting yard for her first assignment: Base Eleven, also part of the San Francisco Division. Except for one week in November 1937, when she worked directly out of San Francisco, her duties were carried out from Base Eleven until Spring 1943. At that time she was moved to the Alameda Base at San Francisco for operations from Pier 43½ under the Captain of the Port. In November of that year, she transferred but a short distance to Pier 47, the Coast Guard Boat Repair Shop, where she continued under Captain of the Port for another two years. In November 1945, the vessel returned to the operating base at Alameda for decommissioning on the 28th of that month. She remained there in storage until sold to John Demas of Morrow Bay, California who renamed her ARBUTICE, No. 258911. Mr. Demas had her completely converted to a private yacht with twin diesels providing a top speed of 14 knots and a cruising speed of nine knots. During the winter of 1955-56, while on a cruise down the West Coast, through the Panama Canal and up into the Caribbean, the boat caught fire and burned to the waterline on April 15, several miles off Cabo Falso on the southwest tip of the Dominican Republic. It was 3 o'clock in the morning and Mr. Demas and the other members of his party barely had time to make the ship's boat before the ex-cutter exploded and went down. Fortunately there was a steamer passing in the vicinity not long after which noted the distress flares and sped to the rescue.

In summary, it is interesting to note that twenty years after commissioning, eight of the 13 vessels discussed in this article are known to be still actively in use: Six in commercial enterprises; two as private yachts. Three have been lost in storms or by fire, and the postwar disposition of two cannot be traced.

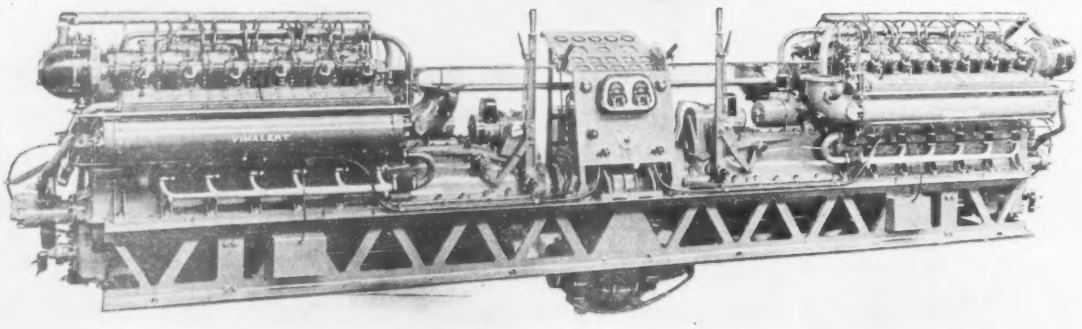
CG-442, later CG-23, then CG-65300, from Starboard Quarter. USCG Photo.



CG-440, later CG-72300, from the Port Bow. USCG Photo

CG-72005, ex CG-435, ex CG 9266, was powered in 1932 with the first Vimalert Duplex Units built. Listed in the July 1, 1947 "Register" as being for Disposal. Specifications shown as 72'0" length, 14'0" beam, 3'6" draft, 30 Tons (Displacement, Full Load), 400 HP - Gas, 38 knots. Built Port Washington, N.Y.

C.G. Photo



CONTROL SIDE OF VIMALERT DUPLEX UNIT

Notes on Part II

1. A detailed description of the boats used by the rum-runners appeared in Popular Boating, January 1957, in an article entitled "The Greatest Boats of the 1920's" by Gerald N. McCarty. The life and personality of a well-known rum-runner of Prohibition days are well portrayed in The Sea Fox - The Adventures of Cape Cod's Most Colorful Rum-Runner, by Scott Corbett with Captain Manuel Zora, published by Thomas Y. Crowell Company, New York, N.Y., 1956.

2. Repeal of the 18th Amendment was proposed by Congress on February 20, 1933, and declared ratified on December 5, 1933.

3. U. S. Treasury Department, Annual Report of the United States Coast Guard, 1937, 1938, 1939, 1940, 1941, (Washington, D. C.), p.3, 3, 5, 10 and 12, respectively.

4. In a memorandum to the Engineer-in-Chief from Lt. E. H. Thiele, Small Boat Machinery and Hull Section, dated March 18, 1937, on file in Record Group No. 26 of the National Archives, is illustrated a complete outline of the various boat-building projects carried out under the Public Works and Emergency Relief Projects. Included were picket boats, harbor tugs, motor lifeboats, motor surfboats and crash boats.

5. In a letter to the Commandant from a local Coast Guard Inspector, dated January 6, 1937, on file in Record Group No. 26, National Archives, the labor problems are discussed at some length, particularly with reference to the yard of William Whiting. Whiting, who constructed the two 65-footers, stated he was operating at only 50% of his normal capacity and efficiency.

6. Highest bidders were: West Coast 80-footers, $49,500; East Coast 80-footers, $51,900; West Coast 65-footers, $34,500; East Coast 72-footers, $38,900.

7. Before World War II, Gibbs Gas Engine Company probably built more of the small boats used by the Coast Guard than any other private yard. The boats constructed were varied, ranging from the "six-bitters" (CG-243 through CG-252; CG-293 through CG-302) and 36-foot picket boats of the mid-1920's to the 38-foot picket boats and 30-foot air-rescue boats of the '30's -- in addition to the 80-footers.

   The yard was founded in Georgia in 1909 as the Gibbs Gas Engine Company and went into active business at Jacksonville, Florida in 1911. A small firm with 20 to 30 employees, the primary activity at that time was the design, production and installation of marine gasoline engines. It was not inconsistent, however, that by the mid-'20's, the company had expanded into small boat construction. During the 1930's, Coast Guard contracts enabled the yard to retain many of the skilled craftsmen who formed, in World War II, the nucleus of trained workers upon which the firm was able to base a greatly expanded operation employing over 10,000 people and involving not only new construction but conversion and repair contracts as well.

   After the war, the company was renamed the Gibbs Corporation and is today employing between 200 and 300 workers, the number contingent upon outstanding contracts at any given time. Although the yard completes some new construction, such as shrimp boats and floating equipment for the off-shore oil industries, most of its activity is in repair and conversion of large tankers and cargo vessels. From time to time, this also includes routine overhaul of some Coast Guard cutters currently in commission in the area around Jacksonville.

8. Chance Marine Construction Company, Inc., had also constructed 10 of the "six-

bitters" (CG-193 through CG-202). The yard was later renamed the Annapolis Yacht Yard.

9. Of the 42 companies bidding on the three classes of cutters, Eldredge-McInnis was selected by 16, or 38%. Nine of the firms did not designate any architect or indicated they would use their own staff, and if these nine are not included in the tally, the percentage of those picking the Boston firm is raised to 48%. No other one architect was selected by more than three firms, a clear indication of the industry recognition which Walter McInnis had achieved by the mid-1930's in the field of design work involving small Coast Guard craft. Concurrently with these new patrol boats, McInnis was also working on designs for two other classes of Coast Guard vessels: a 38-foot picket boat, 15 of which were built by the Freeport Yachtbuilding Company, Freeport, Long Island, and a 63-foot harbor tug, two of which were constructed at the George Lawley and Son Corporation yard, Neponset, Massachusetts. D. M. Callis also designed two 56-foot harbor tugs for the Coast Guard which were built during 1937 by the Al Larson Boat Shop, Terminal Island, California.

10. The Vimalert Company, Ltd. was charged with purchasing the Liberty engines from government surplus for $100 each and then selling them back to the Coast Guard for $4,500 each. The Vimalert firm stated that such charges were inaccurate and baseless as, in fact, very little of the original engine remained in the conversion. The cost of designing and developing the engine, the production and purchase of special parts and the extra modifications required by the Coast Guard was considerable. As a matter of fact, the company stated they lost money on the Service contract which was for 13 propulsion plants (26 Vimalert Duplex Units) and 10 individual Vimalert M-12 engines for spares -- a total of 62 M-12 engines. An interesting letter explaining the firm's position can be found in the U. S. Coast Guard Magazine, Vol. X, No. 4 (February 1937), p.27. A detailed description of the power plant for these cutters is located in U. S. Coast Guard, Engineers Digest, September, 1937, pp. 8-10.

11. Obtained from individual record cards of each cutter; files in Record Group No. 26, National Archives, which include a memorandum to Secretary of the Treasury from the Commandant, dated March 30, 1938.

12. Reference throughout this history is made to "Captain of the Port duties". Such duties, for which a large proportion of the smaller boats of the Coast Guard are assigned, are prescribed by federal statutes and carried out by the District Coast Guard Commanders through the officer assigned the post of Captain of the Port. All the larger ports of the United States have such an authority whose principal duties consist of the following:

    a. Protection of ports, harbors, vessels, piers, docks and other waterfront facilities against sabotage, accident and negligence.

    b. Control of anchorages and movement of vessels.

    c. Issuance of identification cards (during wartime and national emergencies).

    d. Control of the loading and shipping of explosives and other dangerous cargoes.

    e. Promulgation of local rules within the authority of the Captain of the Port.

    f. Control of traffic in harbors and channels under special conditions.

g. Control of traffic from inlets and isolated harbors to vessels at sea.

h. Provision for boarding and examining parties.

i. Enforcement of federal laws on navigable waters within the jurisdiction of the Captain of the Port.

j. Miscellaneous:

1. Patrolling regattas;
2. Ice-breaking;
3. Furnishing transportation to Customs Inspectors and other officials to Quarantine;
4. Cooperation with other federal agencies, both civil and military.

This data was obtained from Captains of the Port prepared in the Statistical Division, Headquarters, U.S.C.G., 1943, pp. 108-113.

13. There is an excellent review of the development of anti-submarine weapons in Samuel Eliot Morison's The Battle of the Atlantic, September 1939 - May 1943, History of United States Naval Operations in World War II, Volume I (Boston, Little, Brown and Company, 1947), Chapter X. The "mousetrap" is discussed on pages 211 and 212.

14. U. S. Coast Guard, Naval Engineering, The Coast Guard at War, Vol. XXVIII, (Washington, D.C., 1951), pp. 10-16.

15. U. S. Treasury Department, Bureau of Customs, Merchant Vessels of the United States, 1956, (Washington, D. C., 1956). This publication was the source for names of civilian owners and official documentation numbers of the former Coast Guard cutters discussed in this history.

16. Complete data on trial runs of the 72-footers was unobtainable. D. M. Callis has pointed out that the trial runs of the 72-footers were held on a measured course off Kent Island in the Chesapeake whereas the standardization trials of the 65-footers were held on a mile course off San Pedro in the open Pacific. Heavy ground swells during the latter trials could have had a retarding effect on the maximum speed obtained. In a letter from F. A. Hunnewell, Superintendent of Construction and Repair, U. S. Coast Guard, to a Mr. Anthony in the Office of Quartermaster General, U. S. Army, dated August 5, 1936 on file in Record Group No. 26, National Archives, it is stated that the Coast Guard had hoped very much to get a top speed of 40 statute miles per hour out of the 65-footers.

17. As pointed out in Footnote No. 12 of Part I, the Coast Guard instituted a new numbering system for small boats in September 1942. The cutters reviewed in this article were renumbered as follows:

I. 80-Footers

CG-406	became	CG-80300,	Radio	and	Visual	Call	Letters	NRQH
CG-407	"	CG-80301,	"	"	"	"	"	NRQI
CG-408	"	CG-80302,	"	"	"	"	"	NRQJ
CG-409	"	CG-80303,	"	"	"	"	"	NRQK
CG-410	"	CG-80304,	"	"	"	"	"	NRQL
CG-411	"	CG-80305,	"	"	"	"	"	NRQM
CG-412	"	CG-80306,	"	"	"	"	"	NRQN
CG-413	"	CG-80307,	"	"	"	"	"	NRQO
CG-414	"	CG-80308,	"	"	"	"	"	NRQP

II. 72-Footers

CG-440 became CG-72300, Radio and Visual Call Letters NRQQ
CG-441 " CG-72301, " " " " " NRQR

III. 65-Footers

CG-442 became CG-65300,* Radio and Visual Call Letters NRHV
CG-443 " CG-65301,* " " " " " NSRC

*For a short period, March 1941 to September 1942, these cutters were numbered CG-23 and CG-24, respectively.

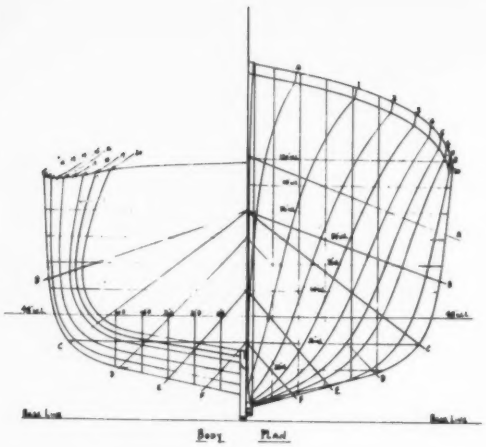
Color Scheme

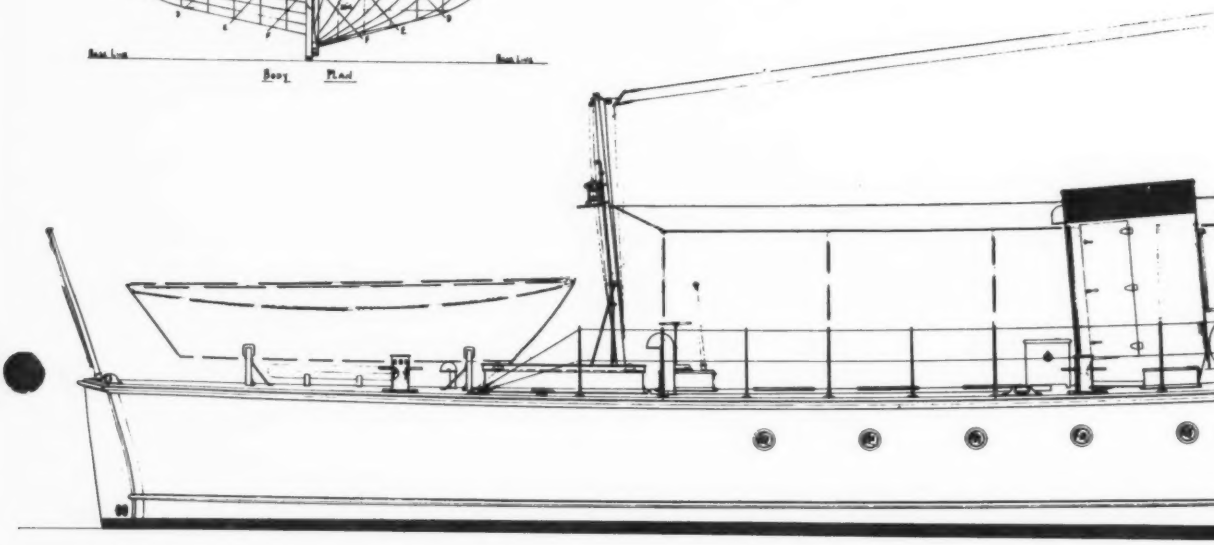
For those who may wish to model the 65-, 72- and/or 80-footers, the color scheme of the three classes as painted at time of commissioning is hereafter provided. This scheme was used until World War II when all were painted the dark grey of wartime naval vessels. This data is from Instructions for Painting, U.S. Coast Guard Vessels, Boats and Stations, 1935.

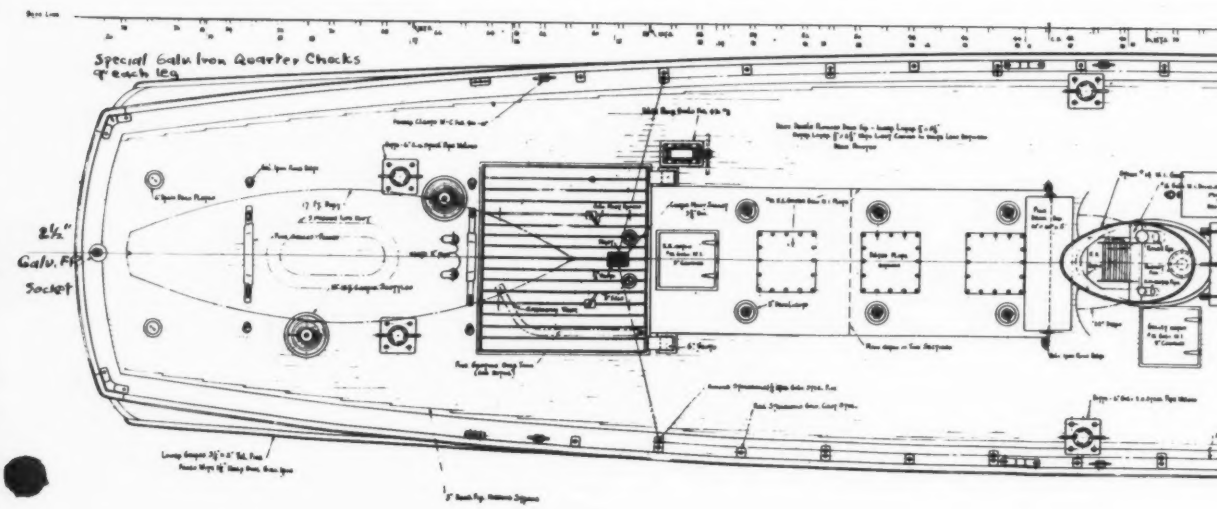
Outside of Hull above Waterline		Light Grey
Hull Bottom		Dark Brown Copper
Boat-Topping		Black
Main Deck (caulked and painted)		Dark Grey
Sides of Wheelhouse and Wings		Light Grey
Wheelhouse Roof		Light Grey
Stack (80-footers only)		Light Grey
Smoke Band on Stack (80-footers only)		Black
Inside of Hull and Cabin above the Flooring, except Wheelhouse		White Eggshell
Inside of Wheelhouse -	Overhead Ceiling	Light Green
	Trim and Hardwood (Bright)	Varnished
	Sides	Gloss White
Floors of Compartments and Wheelhouse		Light Grey
Woodwork Trim (Bright)		Varnished
Principal Fittings		Light Grey
Masts	Ensign Staff	
Yards	Flag Locker	
Gaffs	Flag Staff	
Searchlights	Grating	
Ammunition Boxes	Ladders	
Anchors	Mooring Cleats	
Davit	Ventilators	
Deck Chests	Windlass	
Awning Ridgepoles	Stanchions	
Chocks	Rails and Rail Stanchions	
Bitts - mooring and towing (Bright)		Varnished
Bulwarks (Inside) - Forward Cockpit		Light Grey
Coamings		Light Grey
Hatches		Light Grey
Gun and Gun Mount		Light Grey
17' Swampscott Dory		Light Grey
Dory Chocks and Mount		Light Grey
Dory Cover (Canvas)		Natural
Visual Radio Call Letters (Painted on top of Wheelhouse)		Black on Panel of International Orange
Ship's Numbers (Bows and Transom)		White
Polished Brass Bell		Natural
Running Lights - Starboard		Green
Port		Red
Inner Surfaces		Light Grey

NAUTICAL RES

Vol. 10, No. 1







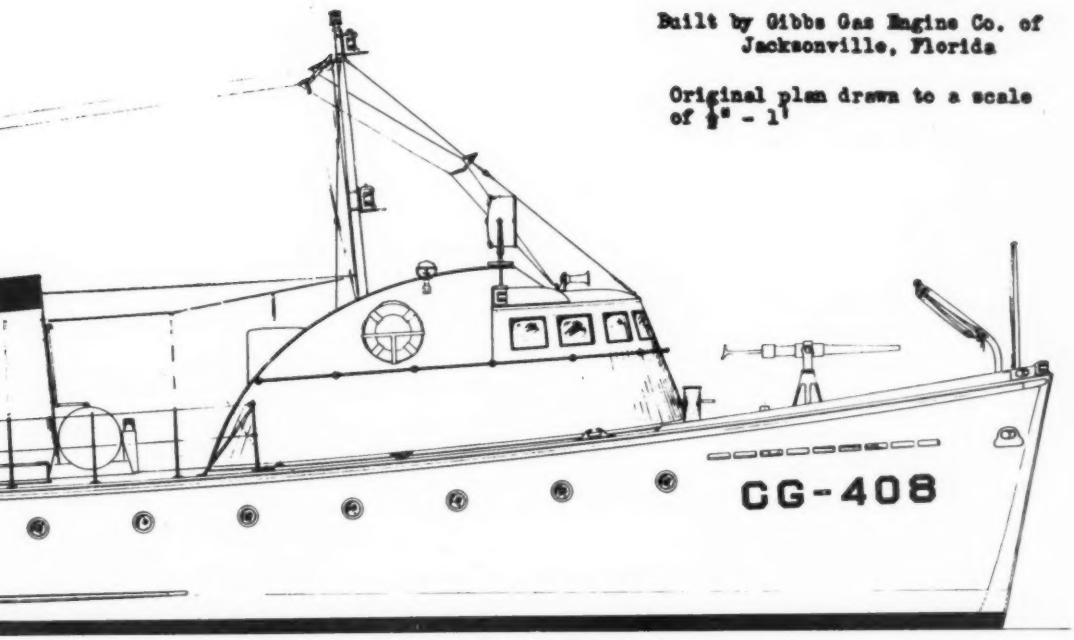
OUTBOARD PROFILE & DECK PLAN

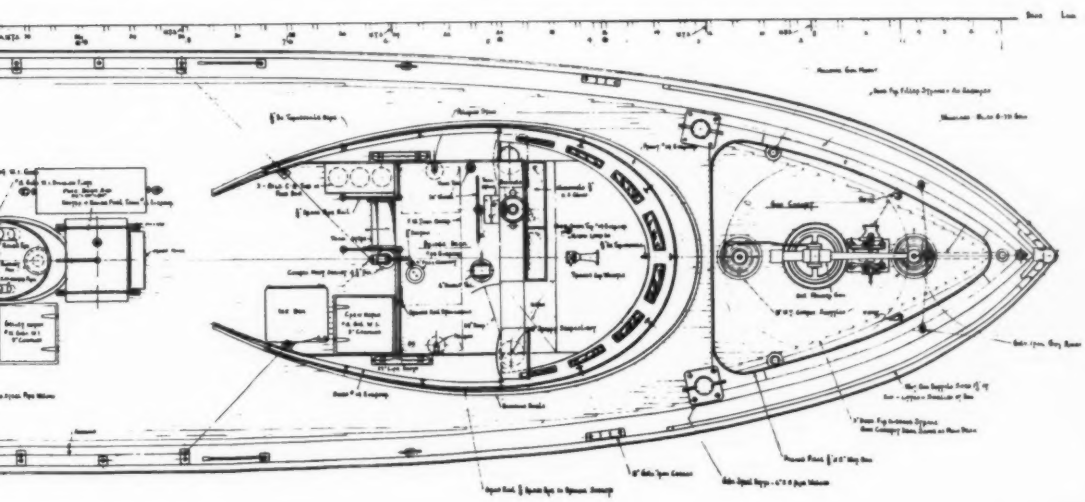
50 Foot Patrol Boat - Wood Hull

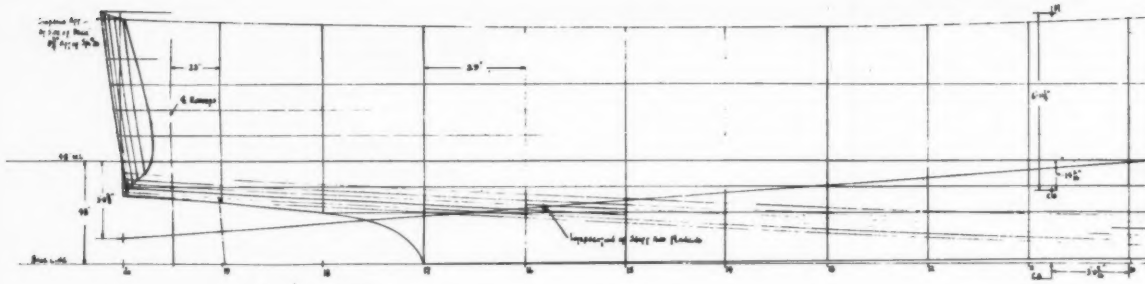
Designed by Eddredge-McInnis Inc of Boston, Massachusetts

Built by Gibbs Gas Engine Co. of Jacksonville, Florida

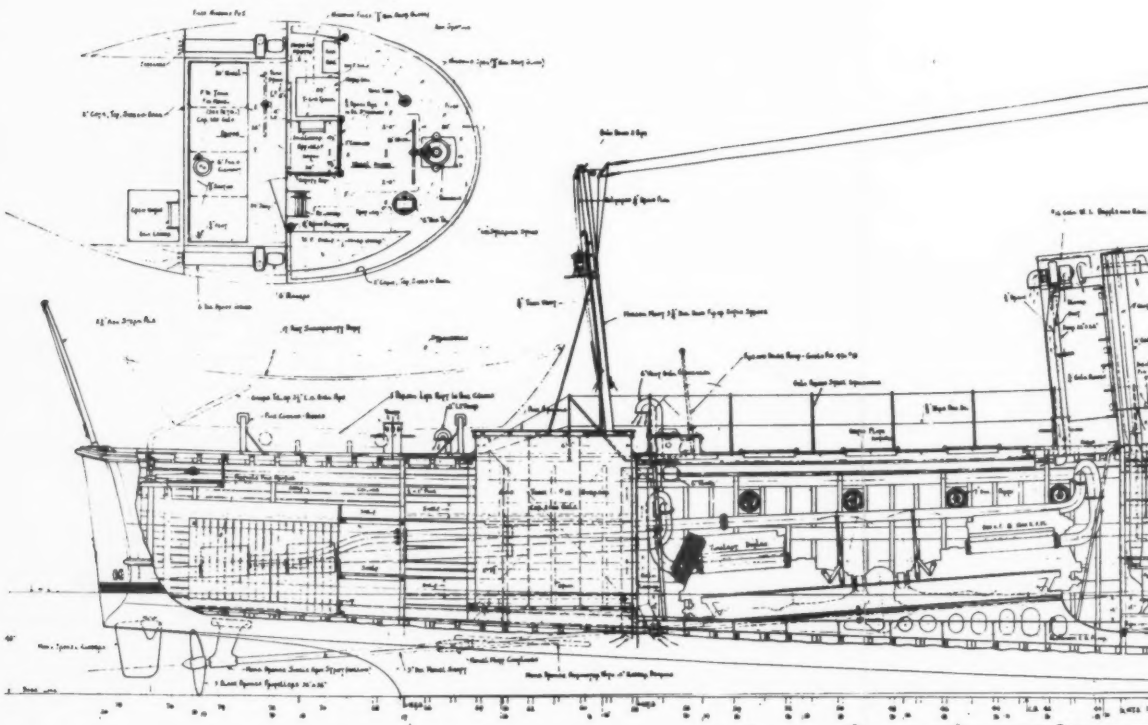
Original plan drawn to a scale of ½" - 1'

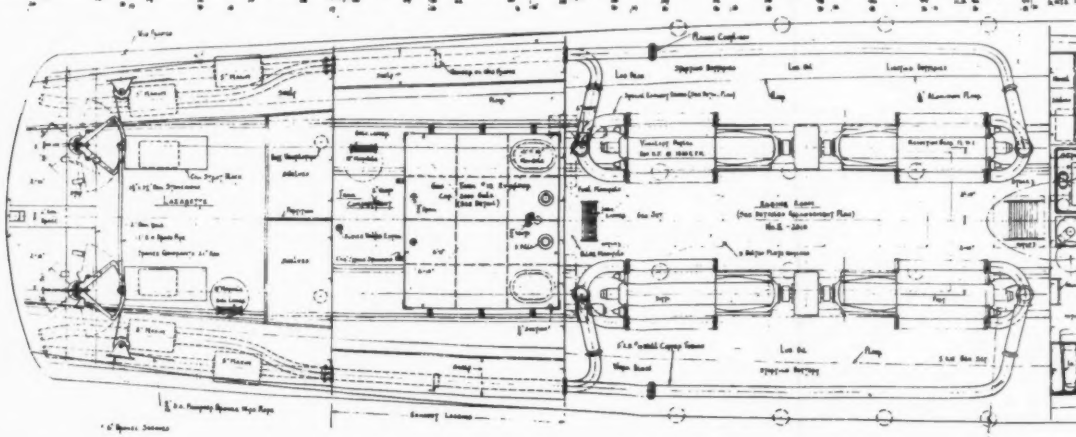


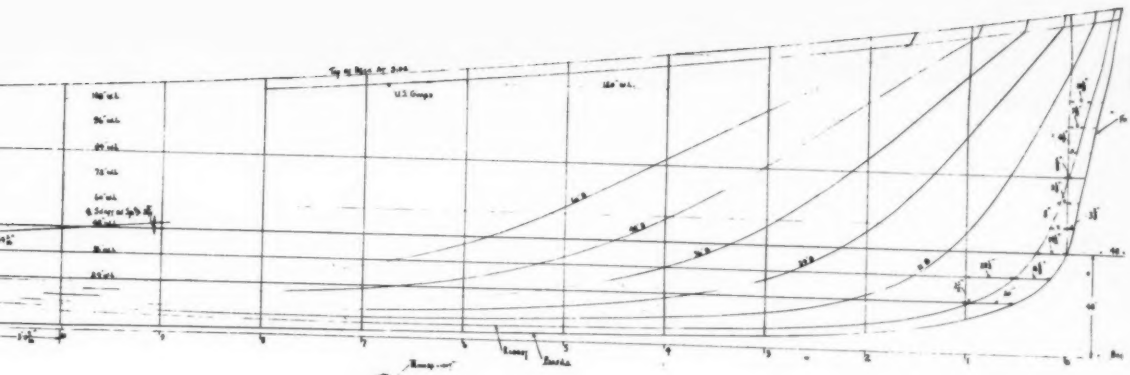


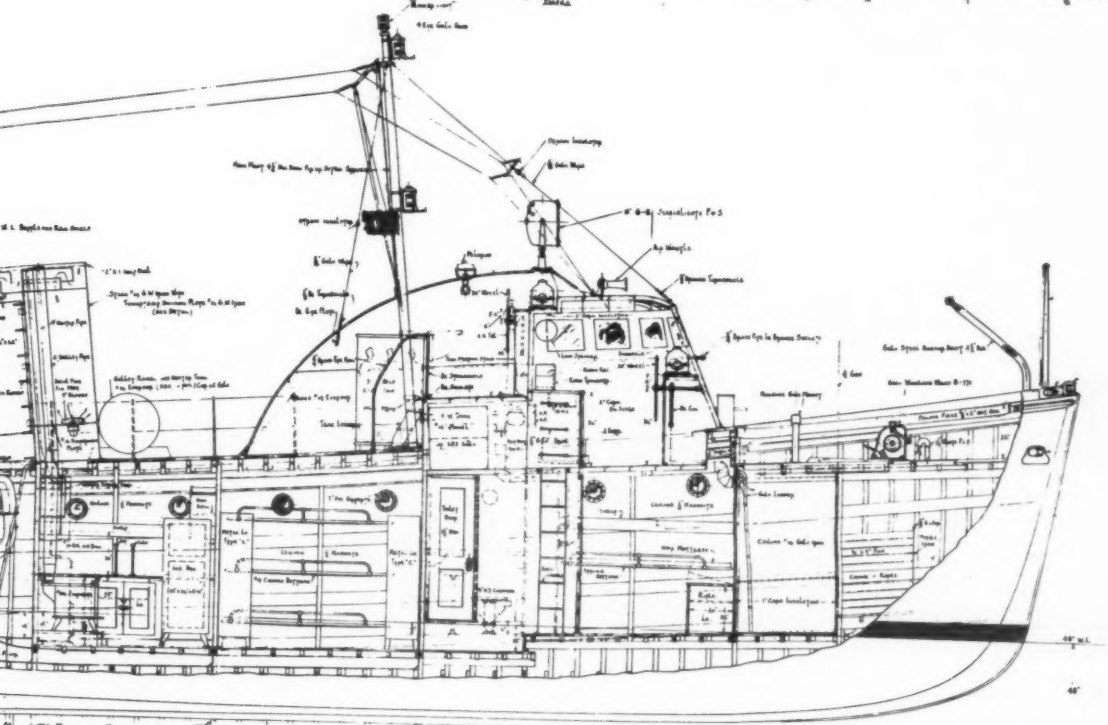


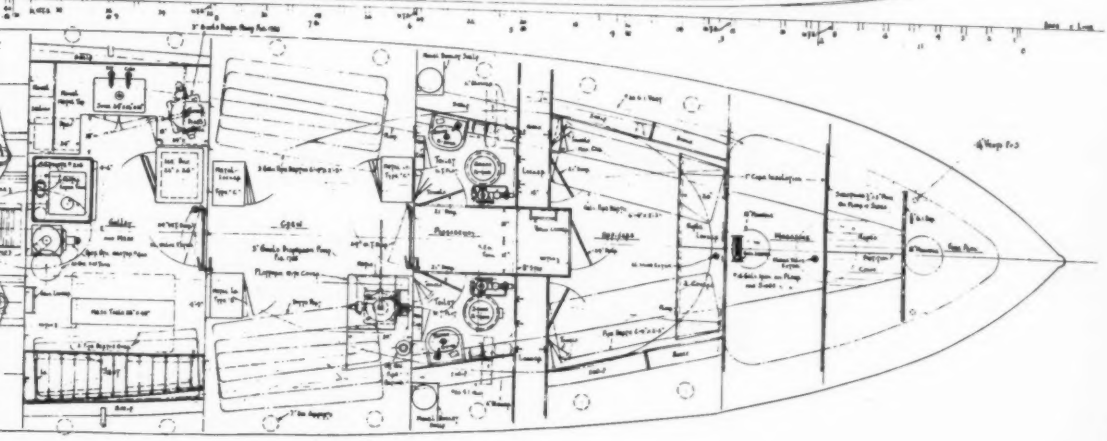
PLAN OF PILOT HOUSE











COLOR IN PERIOD SHIPS

With Notes on Painting Ship Models

By Joseph F. Kostakik

A great many ship models and marine paintings fall just short of being masterpieces due to inattention to correct color schemes and/or painting. The subject of color is indeed a complex one and the serious modeller seeking information realizes that finding same is rarely easy.

The writer has read a number of books on ships and naval architecture, and found that little information can be gleaned as to the type of color used in period shipping. Most times, the author deals in generalities, i.e., they state that outside of bulwarks were yellor or blue and inside red or brown, etc. Yes--but what kind of a yellow or blue, brown, or gray? Since the art and science of color is by no means an easy subject, it is usually left to "experts" in this field, but the information one gathers could often be erroneous.

Now that the ship model maker and marine artists that specializes in strictly 20th century stuff has no problems at all, because any manufacturer or dealer in marine finishes can supply him with color cards that suggest an infinite number of colors used in modern boating and shipping. But what about the artists and craftsmen that are reproducing the ships of the 16th to mid 19th centuries. Before they give up in despair, let me state that the number of colors used for six or more centuries could be counted on the fingers of one hand. In fact, over 7/8 of all colors obtainable today did not exist before 1930. Most of the colors used for several hundred years prior to 1930 were iron oxides. The red was the same red of red brick and the red farmhouses and barns that dot the American scene. The yellow was the brownish yellow ochre used to paint farm buildings in the Midwest and West. The black was simply soot of burnt bones. The blues were also derivatives of iron. The whites, when obtainable, were zinc white or white lead.

As to the paint applied to old ships--the pigments were usually mixed with animal fats, linseed or whale oil, when obtainable. The thinner used was rum. The latter irreverence for the fine things of life such as using rum for a paint solvent came not as a result of temperance or bad taste, but was born of expediency. There were no petroleum solvents then--but plenty of rum. All models of ships from the 16th to the late 18th centuries sport a white hull below the high waterline. This was so, because before coppering (1783), all hulls below water were treated with animal fats--and of course, one knows what lard immersed in cold water looks like.

Color is one phenomena that can not be adequately described by words alone, because any article on color without visual aid or illustration falls very flat indeed. Now it is regrettable that a fancy color card does not accompany this article, but since the cost of any color printing is prohibitive, this luxury had to be dispensed with. However, accompanying this article is a small color card composed of a black background on which is superimposed a dark red and a dark yellow color chip, with a white card slipped between the black background and the color chips. These chips are designed to serve a twofold purpose. One is to illustrate the three major colors, plus white, used to paint ships for centuries. Combining varying proportions of these colors and white resulted

in various grays or "stone colors" referred to in British books on ships. Combining the three resulted in varying shades of brown used instead of red to paint the inside of bulwarks.

The second purpose is to help illustrate why modellers are often fooled into selecting wrong colors of a much later date with which to paint their ships. The writer has once seen an exquisite model of a British revenue cutter of about 1790. The inside of the bulwarks were painted red--but with a red color that did not exist before 1935. The outside was painted with a bright yellow that also was not available in 1790. Now this confusion results from not seeing color correctly. This is due to the fact that all colors are strongly affected by adjoining colors. Most war ships that sported a band of yellow along the gun ports also had a black band above and below the yellow. Now the yellow was as dark or darker than the accompanying color chip, but the black adjoining it made the yellow appear lighter and more brilliant. To illustrate this further--the color chips resting on the white background appear dark--dirty or brownish. But just remove the white paper and immediately they become lighter and more brilliant or saturated. The artists among the NRG Journal readers will recognize this subtle phenomena as "simultaneous contrast". The latter term simply means that dark colors against a light background appear darker and dirtier, and against a black background, appear lighter and cleaner. They also take on subtle shades depending on the color next to them. For example, a yellow next to red appears greener but next to blue, appears more orange. One can readily see how the change from light to dark or vice versa depends on the background or surrounding color. So the yellow band around the gun ports of the "Constitution", "Victory", or "Wasp" looks bright because of the black border, although the yellow was a dark "dirty" ochre.

So, although you cannot be sure that your information on various members of your ship such as frames, masts and spars are authentic, especially when doing research on ships prior to 1830--one thing you can be sure of is that the reds, yellows, and blacks used on old ships looked like the chips accompanying this piece. Many times writers state that such and such a member of a ship was painted gold. It was yellow ochre, usually against a dark blue background. If one has reproductions of Rembrandt's paintings handy--one will find that the most brilliant yellows are actually darker than the yellow illustrating this. This is due to the great mass of dark surrounding the yellow--a characteristic of this master's work.

* * * * *

The second phase of this article deals with a subject almost as difficult as knowing color, that is, correct painting.

Again the writer has seen fine models ruined because the paint job looked as though it was applied with a broom. Subtle planking was lost--buried under a thick goo of paint. This of course, was not due to haste, carelessness, or laziness, but due to a lack of knowledge of painting fine models. To begin with, no paint should be applied to a surface that has not been sealed first. The writer strongly recommends a brushing type of lacquer sanding sealer.

Each coat should be allowed to dry and then sanded with 00 sandpaper or fine steel wool. Sometimes four or more coats may be required. This sealer also serves as a good finish coat for decks and spars. As for painting, the writer has found that the water soluble poly vinyl acetate paints (known as PVA in the paint trade) or the latex paints do a remarkable job. The only difficulty a modeller may encounter is getting a small enough amount. Since the average hull

could be painted with a thimble full of paint, you may have to prevail upon your paint dealer to take a little out of a quart (usually the smallest size available).

Also, stick to material manufactured by the large firms, although we won't recommend any one as their formulation for these paints are pretty much the same. One thing more--never apply these water type paints over bare wood. They must be sealed with lacquer sealer, shellac or a good undercoat. Incidentally, the yellow and red chips herein included, are painted with vinyl water (PVA) paint.

The other types of paints suitable for model work are the flat alkyd enamels. These are usually wall paints and are very durable. Above all--do not apply a paint that is very thick. It is better to put on three or even five thin coats, than to apply a paste-like paint that is heavy and messy.

Again, use great care in selection and application of paint. We cannot help recall seeing a beautiful model from the collection of a late movie star. This model--less than fifty years old had paint scaling off badly--actually destroying its beauty. Some of the Rogers Models at Annapolis also suffered from "dying paint"--as may be other Admiralty models. These failings we can overlook, but with modern science at our disposal, there is no reason why a fine ship model built today, shouldn't look the same way several hundred years from now.

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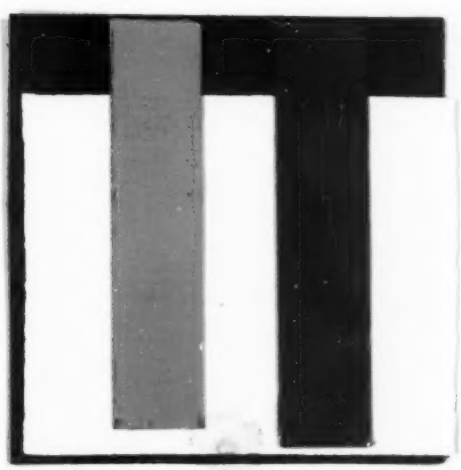
Sample provided by Mr. Kostalik



LETTERS TO THE SECRETARY

From J. B. Jenkinson, Hon. Sec., Greenwich and District Ship Model Societies:

"Thank you most sincerely for the copies of the N.R.J. which arrived safely. I now have a complete set of the last volume, and the spare copies will be passed on to members of my own society. In the past I have written to members of the N.R.G., some of whom I still correspond with regularly, and only recently I wrote to T. Hornsby regarding model rope making. On every occasion, all the members have answered my letters, going to untold lengths to answer my queries and render assistance with an alacrity which is nothing short of amazing. I should like if I may to thank you all very sincerely and I only hope I can be of assistance to any of our members at any time they wish to call."

From Willis L. Nye, Membership Chairman:

"Was at a meeting of the Friends of Balclutha the other night. This was for a drive to see if money could be obtained to purchase the Gracie S. which was a great pilot boat built 60 years ago. Capt. Dodge of Matson is the spark plug on this drive because he feels it would be a good youth project to train them in seamanship fundamentals, etc. Incidentally the Balclutha will have to be drydocked soon to have her permanent ballast put in and also have the hull conditioned better. The old ship is paying its way and is a great tourist attraction at her berth. It is becoming a center of interest in S.F. Also saw Cap. De LaSaux. His Mariner was sailing up the Bay as I came across the bridge and lo and behold bumped into him in the restaurant that evening. These Mariners are wonderful ships. So are the APL version of them converted to carry a few passengers. These Japs are the ones though that build snazzy looking freighters with beautiful lines. They rival the Danes and others."

From Charles S. Fox, N.R.G.:

"A couple of ideas have come to mind with respect to the JOURNAL and I thought I would drop you a line in regard to same. First of all, it has occurred to me that in order to provide better contacts between Guild members that perhaps a code or number system could be inaugurated and incorporated with the Annual Roster. By this I mean that a series of subject interests could be drawn up, a survey made by postcard, and then these interests incorporated into the roster. For example you might have:

1. Early American fighting ships
2. Clipper ship era
3. Small craft
4. Work boats
5. European ships
6. History
7. Ship plans
8. Model building

Beside each member's name and address you might also include his interests, such as - Joe Dokes, 600 Jones Ave., East Hacksaw, New Jersey - 1, 6, 7, 8. As it is at present, we who are newcomers - or those to come, are lacking the knowledge of who is interested in what, and to what degree, etc. Secondly, and again from the standpoint of the latecomer, perhaps it would be possible to reprint in a current issue some of the better articles of early JOURNALS. I do not know, of course, the rate of growth of the N.R.G., but believe a sizeable percentage has joined in the last few years and they are missing some excellent material which was published earlier in the history of the organization."

From L. W. Richardson, N.R.G.:

"Referring to your proposal in the last issue of the JOURNAL to reduce the number of yearly issues, I would suggest that serious consideration be given to quarterly publication with an additional issue consisting of Roster and Index. This is quite a common practice among societies and I feel sure would be acceptable to members of the Guild. You may recall that the "Mariner's Mirror" made the change from monthly to quarterly in the early twenties, and I think, to their advantage. Further, such a move should result in economies of time and money that might allow even more pages of copy per year."

From Edward W. Jenkins, N.R.G.:

"Had not sent in my annual subscription for dues before this due to the fact that I was in some doubt as to whether the Guild was going to continue or not, because of the stoppage of bimonthly issues of our Journal for such a long period of time. I cannot help but feel that some of our other members may have felt the same way. However, I am very happy to know that we plan to continue our existence and in this same matter, Jim, I would like to point out that we people, who are separated from any group having ships and the sea interests at heart, depend solely on the regular issues of the Journal to maintain contact and keep our interest alive. The Guild, as such, obviously could not exist in fact without the Journal. This Harry Hamilton was well aware of as he told me himself, when he made every effort to mail a regularly monthly issue of the Journal. Now personally, Jim, I am not criticizing your efforts in the past. I am thinking only of the good of our organization when I say that I favor a regularly monthly Journal and feel that at least a bimonthly or every other month combined issue, is the very least we can shoot for and keep our membership up and fully alive. I firmly believe that 5 issues a year as suggested in the last issue of the Journal would contribute to a precedent in such fashion that some future secretary, if hard pressed for time due to business or personal reasons, could conceivably cut down our issues of the Journal to even quarterly.

"If the work in getting out a Journal is such that more help is required, why not put it to the membership for assistance, and I do believe that help would be forthcoming particularly among our local members who live near you. After all we who knew him realize that Harry Hamilton's sole hobby and interest was corresponding and getting out the Journal every month with the help of Mrs. Hamilton. For those of us who are not retired for one reason or another and have to earn the old daily bread, putting out a Journal every month alone and unassisted, without robbing time from our other hobbies and personal interests is practically impossible.

"Have started researching and taking photographs of Biloxi type fishing craft and their relationship to the Biloxi Schooners and will promise it as an article by the end of this year."

From Howard I. Chapelle, Curator, Division of Transportation, Smithsonian Institution. (Note: This letter was received some months ago, but contains some interesting ideas that are still new.)

"As you may recall, I drew up the plans of the British Revenue Cutter DILIGENCE for the old "Rhode Island Mariner" magazine. The plan was made from a photostat of the Admiralty draught. Since then, I have completed a study of the British Cutter since it paralleled the development of our pilot-boat schooner. I can now say that the DILIGENCE plan was taken off a Revenue Cutter built in 1799 at Frank's Quarry (near Southampton) and from the plan a number of new cutters were built after 1816 - such as CHEERFUL, SWIFT and others.

"Since the "Baltimore Clipper" was published in 1930, I have obtained more plans and information which is, of course, still unpublished. One of these days I shall have to work up this material, but I wanted to state that there are a few lines of Baltimore Clipper brigs, brigantines and even ships in existence. I have found good visual evidence that the French copied the Baltimore Clipper for a very limited period, say 1794-1798 in their privateer ships and have the plans to back up my theory. Indeed there appears to be vague evidence that American shipwrights from the Chesapeake went to France in the 1790's but so far I have been unable to procure a record of a specific case where the name of the shipwright can be given and so, in spite of British statements on this I prefer to call the claim a theory rather than an historical fact.

"Some very fine Baltimore Clipper type brigantines and schooners were built in Holland. In the Prins Hendrik Maritime Museum at Rotterdam there is a fine rigged model (contemporary shipyard model) of one of these--DIANE--built at Rotterdam in 1837 or thereabouts for the South American trade and the Museum has plans of this and similar vessels from the builder's yard. These were all armed vessels and some were 3-masted schooners apparently. I dare say more material exists in Denmark and Scandinavia on the Baltimore Clipper for the type was widely copied in Europe. I have a fair record of the French material in part but this is hard to get at apparently.

"While I was in London I was fortunate enough to be able to see the annual Model Engineer's Exhibit. The work of many of the English Shipmodellers is extraordinarily fine. I was particularly impressed by the number of models of small fishing boat types exhibited; this field is apparently much more popular than historical ship models, men of war and square-riggers generally which I consider a good thing. A number of modellers are building ships' boats in small models--completely framed and planked and gems of fine workmanship; the Draper models in this class I had a chance to see at close range and they were a work of art and first-class museum pieces. Models of sailing barges were numerous also--how come we have so few sailing-schooner-scow models in this class? It is a pity that our model-builders do not turn to small fishing craft and odd types more for the field would be most interesting and so much material is available."

From Mehrel Shank, N.R.G. Registrar of Ship Plans:

"For several years I have had a plan running around the back of my mind. It all started during those years when I didn't know from one day to the next whether I would live or not. I wondered what would become of my ship model plans if something would happen to me, for I would like them to be put to use instead of just being stored in some attic to be thrown away as junk sometime.

"I thought about trying to start a plan loan service for Guild members. When I get back to Nitro I am going to take one room for cabinets, files, and working space for modelling. In fact, building all of the files will be my hobby for a while. I have wondered about trying to start a plan loan project, because most modellers have some old plans laying around that they could give to such a project. Yet, would such a thing work? I am not worried about someone taking advantage of it, but how reluctant would modellers be to let go of old plans. All that it would cost a borrower would be the postage and he might be able to use some plans that he could no longer buy. Maybe we can work some such thing out.

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QUERIES

18-1 - - Karl F. Wede, Box 195 R, R.F.D. 3, Saugerties, New York - - Information desired regarding old ships bells, such as present location of interesting bells with historic associations, names of makers of ships bells past and present, folklore and superstitions connected with shipsbells, etc. Would also like to have some information on the history and development of ship illumination, navigation lights, cabin & fo'csle lights, etc. Customs, anecdotes, stories and incidents connected with such lights, names and terms used for special types of lights and lanterns wanted.

18-2 - - Walter M. Teller, Lahaska, Pennsylvania (non-member) - - I would like very much to hear from anyone who personally spoke with Captain Joshua Slocum, or who owns or knows the whereabouts of any letters written by Slocum. I should like to know of any inscribed copies of his books and particularly of the existence of any copy of "Voyage of the Destroyer from New York to Brazil". Am also interested in photos of the Captain, newspaper clippings pertaining to him, and anything useful that may be used in the further documentation of his life and work.

18-3 - - Eric Steinfeldt, 822 Vanderbilt Avenue, San Antonio 10, Texas - - Can you advise what happened to the manufacturer of the "Guilder Model Builder" (an excellent lathe)? I have one of each for wood and metal. My only regret is the lack of a threading device on the metal lathe.

18-4 - - Robert H. Burgess, Curator of Exhibits, Mariners Museum, Warwick, Virginia - This summer the museum is having an exhibition commemorating the sending of the first message over the Atlantic cable. We shall try to feature the maritime aspect of this, that is the laying of the cable. To tie in with this theme, we are trying to find a model of the GREAT EASTERN which was a pioneer cable layer... This exhibition is to be ready by the latter part of July and I thought there may be time between now and that date to insert a note in the "Journal" of your Guild to the effect that if any of your members know of such a model in this country they can get in touch with me.

18-5 - - Dan Keough, c/o Bakelite Co., 420 Lexington Ave., New York 17, N. Y. (non-member) - - For some time now, I have been interested in naval subjects (I am a combat veteran of "Task Force 77" and currently a C.I.C. instructor in the U.S.N.R.). I have found the former Japanese Navy and its warships of particular interest, but find it almost impossible to obtain any accurate information, photographs, or detailed drawings of any of the Japanese warships commissioned after December 7, 1941. I am particularly interested in the "Terutsuki" and "Shimekaze" classes of destroyers, and the many carrier classes built in Japan during the war, that seem never to have been photographed (except from the obscure bird's-eye view of a Navy dive bomber). Mr. William Wilkinson, a member of the Nautical Research Guild was certain you could refer me to some source where I could obtain this information. At present, I am particularly interested in the "Terutsuki" destroyers. Checking for data in the latest Janes Fighting Ships, I note that they list this class (one in the Russian and one in the Chinese section) as mounting 4" guns. I'm sure this 4" gun data is inaccurate as these ships had a standard displacement of over 2,700 tons and it was not like the Japanese to mount such we k armament on such formidable gun platforms.

I have an extensive nautical library, but a good deal of these books were published during or immediately after World War II, and the information they contain on the Imperial Navy is far from complete. I assume that the U.S. Navy must have compiled some complete work on the Japanese Navy which would include the many "mystery ships" turned out during the war, which I might be able to purchase. Also, perhaps O.N.I. identification manuals on this subject which would no longer be confidential, might be available. I will be very grateful for any help you might be able to give me in this matter.

ANSWERS TO QUERIES

By Howard I. Chapelle

128-8- Rich - Thorough search of Admiralty plan files has produced nothing more on plans of Revolutionary War Fleets on Lake Champlain except one items, perhaps a proposal. This was for an armed schooner, of which dwo drawings of the lines were made. However, a third drawing shows these plans revised to produce a cutter or sloop. No name attached. I suppose Boynton and King must have bought Maria and Carleton.

087-4- We have plan of Confederate Albemarle here - lines but no body plan. We will redraw and develop body plan for museum model in near future I expect. We also have plan of ram Columbia.

We have some plans of early USN ship's boats, some of which I published in History of American Sailing Navy.

You might advise readers of the Journal of our collection of U. S. Lightship and tender plans, lightships back to 1857. There is a fine model of a walking-beam engine in this Museum. It has flywheels instead of paddle and I would like to recruit some willing slave-labor to replace them with scale paddle wheels!

By Norman N. Rubin

087-9 Query about the ARK ("drifter") by Thomas E. Tragle: - This one, I gave up long ago, but for what good there may be, here is the data I have gathered plus a few conclusions that may be of interest to you.

1. "Science News Letter", 17 September 1949 carries article titled "Is Noah's Ark Fiction?"

2. Washington "Star"

a. 10 August 1953; Col. Edson D. Raff of New York, with American Military Mission in Turkey, starts climb of Ararat. (No further reports).

b. 29 August 1949, 4 September 1949, 10 September 1949, 14 December 1952, 22 April 1953; Dr. Aaron J. Smith, 61, retired missionary of Greensboro, N. C.; Walter Wood, 36, Seacliff, L.I., New York; Wendell Ogg, 24, Knoxville, Tenn.; E. J. Newton, 46, of D. C.; start climb of Ararat, with help of Turkish goat. Explored areas said by aerial reconnaissance to contain ice-covered Ark. No luck. Dr. Smith states, on return, that they had found nothing. Newton, arrested in 1953 for various things, claims to have piece of wood from Ark, located 1,000 feet below Ararat's 16,946 foot peak.

c. 28 July 1954, 26 July 1955; John Libi, elevator operator of San Francisco, made two unsuccessful attempts to find Ark on Ararat.

3. Genesis 6 to 9: length 300 cubits, breadth 50 cubits, height 30 cubits. Built of "gopher" wood. Rooms inside. A window "and in a cubit shalt thou finish it above: and the door of the ark, in the side thereof; with lower, second and third stories." God made a cover for it. Noah removed the cover afterwards. Upward of 15 cubits of rain fell, over the tops of the mountain. Trip, took about 14 months.

4. Encyclopedia Britannica, cubit is the distance from elbow to tip of middle finger:

a. Hebrew cubit 17.58 inches.
b. Egyptian cubit 20.7 inches.
c. Greek cubit 18.22 inches
d. Roman cubit 17.5 inches.
e. English cubit 18.0 inches.

5. U. S. Department of Agriculture: Modern name of "gopher" wood unknown.

6. Encyclopedia Britannica; under "Deluge", we find that earlier, or parallel to the Biblical version were other stories of floods:

a. Babylonian; predates Bible; fragments of Eleventh Tablet of the Gilgamesh Epic describe Babylonican Noah, named Utnapishtrim.

b. Various versions from Greece, Wales, Lithuania, Iceland, India (Sanskrit, 6th Century B.C.), China, Burma, Cochin-China, Malay, Indian Archipelago, Australian aborigines, New Guinea, Melanesia, Polynesia, Micronesia, South, Central and North America.

7. Conversation with Director of Zoo, Washington, D.C., indicates that the 3,174 animals, representing 749 species, in the zoo, eat about 65 tons of food per month:

1200 lbs. horsemeat	2 tons bran
3500 lbs. fish	3 tons scratch
4500 lbs. bread	700 lbs. seed
25 tons clover hay	400 lbs. seed
4 tons hay	300 lbs. millet
8 tons straw (bedding)	500 lbs. suet
4 tons corn	2500 lbs. white potatoes
10 tons oats	miscellaneous; beets, yams, etc.

Space for each animal can be calculated from data in book "A Zoological Park," No. 3 of Park Management Series by the American Institute of Park Executives; Oglebay Park, Wheeling, West Virginia. Dr. Read speculates that one of each genus could have fitted into the "Ark," not one each species. Points out terrific task of feeding, exercising and caring for the animals. Remarked that 101 species were mentioned in the Bible.

So much for the "facts". Now, to speculate.

1. Gopher wood unidentified. (Maybe somebody does have a sample: there is rumor of a Frenchman who found the Ark; I can't run it down. Carbon 14 and microscope would date and identify the wood.) If gopher trees tall, one type of hull possible. If short, another type of hull construction indicated.

2. Length-to-beam ratio 6 to 1, indicates rather fine hull, not bluff. (Short timbers; the gopher tree is small?) Removable top. Three stories high, 30 cubits; about 15 feet per story. If "Ark" was a rectangular scow, it would have on the order of 100,000 sq. ft. of deck space. For a 14-month trip, food for a pair of animals would average out as about 1140 lbs; with about a gallon a day of water, or 420 gals. (56 cubic feet) per animal. Using the figure of 100 cubic feet per ton, each pair of animals would average, in addition to its living space, about 170 cubic feet of supplies. Noah and family (eight) would need about 1400 cubic feet. Allow a couple of tons for ships stores, say 200 cubic feet, let us assume that, instead of an exercise run for each cage, the animals were exercised in sequence on a common run, say 20 feet by 100 feet. The average cage size would be, say 10 ft. by 10 ft. by 7 ft. high. Thus, in a box-shaped hull, "Ark" could have carried perhaps 1,600 pair of animals. It would have been impossible for eight people to care for them.

3. Now, there are about 1,000,000 known species divided into 200,000 genera. About 5% of these represent creatures who would have to be carried and tended on the "Ark." The remainder were sea animals, amphibians, or insects which could fend for themselves on the "Ark." Place yourself in the position of a Staff Angel assigned the job of organizing a Deluge. It seems likely that in each country could be found a

family, like the Noahs, worth saving. Let each family, then, collect its local animals only. These animals would in all probability be the only ones known to the family, who would therefore believe that they had a pair of all known species. It would also save a good deal of transportation worry to marshal the beasts at several local staging areas rather than one central point. This would cut our Noah's share down to about 500 geners or 2,500 species assuming from literary evidence that a total of twenty "Ark"-type vessels were launched. We must also assume that the geners differentiated into species and subspecies after the Deluge. This is still stretching things, in that the family would be hard pressed to clean cages and exercise each animal pair of 500 geners about once a week. The health of the animals could very well have suffered.

Nevertheless, let us proceed on this basis, which would give us a hull of block coefficient of about .4, or quite fine lines.

4. This seems to be evolving into a vessel along the Egyptian lines; long, narrow and rocker shaped, with fine ends. The basis is, of course, highly speculative.

5. Have you tried Lt. Cdr. Ben Eli, Director, Maritime Museum, Haifa, Israel? He has a series of models of Mediterranean vessels, and may have worked up some data on "Ark".

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IT IS ALWAYS IN "GOOD TASTE" AND "MANNERLY" TO SEND A THANK YOU NOTE IN RETURN FOR AN ANSWER TO YOUR QUERY, OR THE LOAN OF A BOOK, OR THE LOAN OR GIFT OF A SHIP PLAN, OR ADVICE ON HOW TO DO A JOB. REMEMBER, THE MAN OR WOMAN WHO TOOK THE TIME TO HELP YOU WITH YOUR RESEARCH WILL BE MORE THAN DELIGHTED TO HELP YOU AGAIN IF YOU FAVOR THEM WITH AN APPRECIATIVE "THANK YOU".

--ooOoo--

BOOK REVIEWS

"THE FATE OF THE MAINE", by John Edward Weems, published by Henry Holt, New York, 1958, 207 pages, illustrated,($3.95).

The subtitle of this work "The Biography of a Celebrated Ship" accurately indicates this is a narrative in considerable detail about a particular ship from the time of her construction to her tragic sinking. In addition, there is some account of our naval war with Spain in Cuban waters. The narrative contains details of the raising of the MAINE and her later burial at sea in 600 fathoms. Also included are photographs, a bibliography and a roster of the crew.

"WAR FISH", by George Grider and Lydel Sims, published by Little Brown & Co., Boston, 1958, 282 pages ($4.00)

This work is a recital of the World War II experiences of Captain George Grider, USN (Ret.) who commanded five submarines on nine war patrols in the Pacific. One such craft, the FLASHER, holds the record for enemy tonnage (100,000 tons) sunk during the late unpleasantness. This is a well written narrative.

"AMERICAN KNIVES", by Harold L. Peterson, published by Charles Scribner's Sons, New York, 1958, 178 pages, illustrated ($4.95).

This work is a study of American knives fabricated from pre-Columbian period to the present. The book contains a section devoted to Naval dirks and similar naval knives (not swords). The text is well illustrated and lists of American makers, marks, and dealers appears in an appendix.

"SAN FRANCISCO BAY", by John Haskell Kemble, published by Cornell Maritime Press, Cambridge, Maryland ($10.00)

This is the third pictorial history of its kind published by Cornell Maritime Press and it certainly carries forward the maritime history of this nation so ably initiated in Marion V. Brewington's "Chesapeake Bay" and Professor David B. Tyler's "Bay and River Delaware".

The present history has been carefully arranged to cover a number of different nautical subjects pertinent to the San Francisco Bay and tributary rivers thereof and each chapter has been chronologically arranged so as to trace the development and expansion from the earliest days of discovery to modern times. Although there are relatively few pages devoted exclusively to text, the author, in many instances with the assistance of contributors, has noted in great detail items of interest that appear in the numerous photographs that make up the work. The captions that appear under each painting, etching, plate and photograph are most complete and instructive. In many instances the eye of the casual reader would miss important details - that might not be too obvious - were it not for the very adequate captions.

The naval historian searching for long forgotten ships, may be pleasantly surprised to find the object of his search popping up in some of the illustrations of this work. Professor Kemble has made a valuable contribution to nautical research with his latest work, and a copy will certainly be a valuable reference to add to the book shelf.

"THE NEW MAYFLOWER: HER DESIGN AND CONSTRUCTION" by William A. Baker, published by Barre Gazette, Barre, Massachusetts ($8.00) - From a review prepared for the Library Journal by Dr. Vernon D. Tate.

Information about the MAYFLOWER that brought Pilgrim colonists to Massachusetts Bay is exceedingly sparse. No plans and few authentic details exist. Mr. Baker as a naval architect became interested in the MAYFLOWER enigma in 1951 and spent a great deal of time in the ensuing six years in research. He studied contemporary manuscripts and printed books in this country and abroad, and carefully reviewed the results of previous research. His findings, deductions and conclusions with respect to the vessel herself and to 17th century shipbuilding are reported in Part I of the work.

Part II deals with the construction of the NEW MAYFLOWER a full size replica as nearly representing the size and type of the Pilgrim vessel as is possible at this date. Built in England by a group known as "Project Mayflower" from designs by the author, the NEW MAYFLOWER in 1957 made the Atlantic crossing under sail with ease; the voyage has been well described in a current book and illustrated by an excellent color motion picture (color movie available on loan basis by the "Mayflower Moving & Storage Co.") She is presently visiting ports on the East Coast of the United States and eventually will become a permanent exhibit at Plymouth, Massachusetts, with "Plimouth Plantations, Inc." as the custodian.

The book is attractive, carefully done and well illustrated by drawings, sketches, facsimiles of old manuscripts and photographs. It is a definite contribution to our knowledge of the MAYFLOWER and ships of her period as well as to shipbuilding technology generally. Beyond the factual value the inferential research techniques employed are worth study. Ship Model Builders will hail the volume with enthusiasm especially for the four large plans and other details. The book may well start a vogue for building new and better models of the MAYFLOWER, although it is not, except incidentally, a guide for model builders. This book as one of the best things of its type to appear in recent years will quickly find its way into all public and private collections and should be in every good Public and University Library.

"ANCHORS AND ANCHORING", second edn., by R.D.Ogg and R.S. Danforth, booklet published by Danforth Anchors, 2121 Allston Way, Berkeley 4, Calif. A free booklet of 15 pages containing some very interesting factual and historical data on anchors. The proper use of anchors, discussions on wind drag, current drag, charts showing comparative holding power in various anchors and mathematical formulas pertinent, complete a very interesting reference manual. A request to the company will probably be answered.

INTRODUCTION OF NEW MEMBERS

ARNOLD, HOWARD W. - 130 Farley Avenue, Fanwood, New Jersey; advises he is a modelbuilder and artist interested in ships of the 18th century, and small craft of our early history. Mr. Arnold is Head of Advertising in the School of Visual Arts, NYC. He finds nautical research helpful in producing more accurate paintings, and is presently collecting material leading to models of the Jamestown Fleet. Introduced to the Guild by Mr. J. J. Baader.

ATTMORE, HARRY B. - Stone Harbor, New Jersey; served in World War I in the U.S. Navy aboard the old flagship PHILADELPHIA, and later as an officer in the U. S. Coast Guard. Mr. Attmore is another whaling history fan, and is planning to try his luck with ships in a bottle. He was introduced by Mr. Carl Boston.

BOITON, SERGE - 70, Boulevard de Strasbourg, Toulon (Var.), France; is a member of "Club des Maquettistes Toulonnais" (French model makers club) and models ships of all periods. Members of his shipmodel society have expressed considerable interest in our publication and it may be possible to develop direct sources of information if correspondence is conducted in French. Mr. Boitan was introduced by his brother, Alain, who became acquainted with N.R.G. while living in the States. (Note: Both brothers correspond in English).

CAULKINS, H. JAMES - 88 Five Mile River Road, Darien, Connecticut; advises that he is interested in 2 masters (U. S. origin) built between 1750 and 1850. He is a shipmodel builder and was introduced to N.R.G. by Mr. A. M. Underhill.

CAZAUBON, LAWRENCE P. - 3021 Arts Street, New Orleans, Louisiana; is a ship model builder most interested in the "McKay Clipper" era. He is presently completing a model of the FLYING FISH.

DOWLING, L. C. - c/o Port Directorate, Fao, Iraq; (Home address - 104 Venner Road, Sydenham, London S.E. 26, England); advises that he is interested in fancy rope and canvas work, producing 8mm cine pictures of nautical interest, draftsman, and shipmodel builder. His period of research is indicated as schooners of the 19th & 20th centuries, particularly the THOMAS LAWSON at the moment.

ESHERICK, JOSEPH - 2065 Powell Street, San Francisco, California - tells us he is primarily interested in small fast ocean-going craft, both cruising and racing.

FORSYTHE, DEMPSEY E. - 3430 Juneway, Baltimore 13, Maryland - is rejoining the Guild after a serious illness of some months. We are very happy to have him with us once more, and hope to hear more of his model building (period 1600-1850).

FRYE, ROY A. - 305 East McCune Street, Roswell, New Mexico - nautical interests include modelling sailing ships, barges, small sail craft of periods between 1690 and 1860. Particularly interested in obtaining plans, ideas, photos, etc. for rib and plank construction (scale $\frac{1}{2}$" - $\frac{1}{4}$"). Mr. Frye collects publications of a historical nature pertaining to ships and nautical matters, and indicates willingness to enter into correspondence with any other member having similar interests. Willing to swap ship photographs.

GENTER, Captain CARL G. - Apt. 512, Hotel Casa de Vallejo, Vallejo, California - advises, "I am a licensed Master Mariner. For the past 13 years I have been employed as a pilot at the Mare Island Naval Shipyard." And continues, "I have always been interested in ship models, but somehow never got around to building any. Recently, I assembled a plastic model of the CONSTITUTION, which I realize is not model building, but did take considerable time and trouble to rig the model properly. At present, am chiefly interested in learning more about sailing vessels and ship model building. I hope to attempt one of the miniatures in the near future".

HOWARD, LAWRENCE C. - 24 State Street, New York 4, N. Y. - informs us "Everything nautical interests me although I never specialized in ship models. As the author of "Log of the Edward Sewall 1911-1912", I sailed in both sail and steam. In recent years I have been active in steamship and stevedoring business.

KAPLAN, MORTON H. - 15 Clent Road, Great Neck, New York - was introduced to the Guild by Mr. Arthur Henning who advises he is a ship modeler and a craftsman of merit. Mr. Kaplan is a member of the New York Shipcraft Club.

LITTLETON, EDWARD C. - 2676 Ocean Avenue, San Francisco 27, California - is particularly interested in cartography. Seafaring is a tradition of the Littleton family (Chesapeake) and our new member at one time served in the merchant marine. He was introduced by Max Lembke.

LOEF, ROBERT - Postfach 70, Burg, Bez. Magdeburg, Germany - is a well known publisher of nautical books, many of them of particular interest to ship modelers. Several of his productions have been reviewed in past issues of our JOURNAL and we hope to have the pleasure of presenting more reports in the future. Mr. Loef was introduced by Karl Wede who has also kindly translated several of Mr. Loef's letters to the Secretary from time to time.

LORING, CHARLES M. - 1277 Redwood Road, Napa, California - is a naval architect by profession and a member of the S.N.A.M.E. He is most interested in ship design and maritime history of the Pacific Coast with particular reference to the Pacific Mail Steamship Co. and the Alaska Packers' Association. He was introduced by Willis L. Nye.

MaGILL, GEORGE - 4957 Mercier, Kansas City, Missouri - was introduced to the Guild by Michael J. O'Connor. We hope to have a report from Mr. MaGill in the near future.

MacNAUGHTON, STEPHEN S. - 3 Winship Street, Bath, Maine - is particularly interested in the large coasting schooners and "Down Easters". He describes himself as a model builder of sorts and interested in ships of the 1870-1920 era. His report also includes "During the last two summers, I have explored the last remaining hulks on the Maine Coast: HUPER & LUTHER LITTLE at Wiscasset; CORA F. CRESSY at Brimon; MARY F. BARRETT at Robinhood; and EDNA McKNIGHT at Boothbay." Mr. MacNaughton was introduced by F. E. Bowker.

MERRIAM, Jr., EDMUND A. - 9 Central Street, Winchester, Massachusetts - is a ship model builder and a collector of ship plans, books, pictures, etc. He was introduced by Winthrop Pratt, Jr.

MORGAN, CHARLES L. - 1403 East 15th Street, Long Beach 13, California - is another new member whose family followed the sea. Mr. Morgan is a ship modeler and quite an active one for a young man of 81 years. He is a collector of literature of interest to shipmodelers, and was introduced by Willis L. Nye.

NASON, HUGH R. - 29599 N. Miles Road, Solon, Ohio - advises he is planning to make a trip during the summer of Europe to photograph current sailing craft and interview those who still earn their living manning these ships. In the meanwhile he is a modelbuilder interested in sailing ships of the 18th and 19th centuries and is presently working on the NEWSBOY (brigantine). Mr. Nason was introduced by our busy membership chairman - Willis L. Nye.

PETREJUS, E. W. - c/o Maritiem Museum "Prins Hendrick", Burg. S' Jacobplein 8, Rotterdam, Holland - is another renewal of membership. Mr. Petrejus needs no introduction to the nautical research fraternity as his etchings of ships of all periods and most recent book "Model van de Oorlogsbrik IRENE" have been acquired by many of us for the reference bookshelf.

INTRODUCTION OF NEW MEMBERS and CHANGES OF ADDRESS (continued)

SCHREIBER, CHARLES J. - 20 East 49th Street, New York, New York - Mr. Schreiber was introduced by Gordon Grant, and it all came about as a result of a conversation involving Mr. Schreiber's 25 foot junk THE JADED LADY and Mr. Albert Wagner's recent article on junk voyages. A footnote to the latter is offered, "Captain Nilsen of the AMOY had moved his craft from New Rochelle down to Frog's Neck and is still aboard with his charming bride. The late Mr. Ripley's MON LEI was purchased last summer by Mr. Alan York who plans to live on board ship." - - The letter continues, "My interest in junks stems from the fact that there is so little knowledgeable material available concerning these craft - - and possibly some members (of the Guild) may tell me where I can get authoritative information."

SELL, WOLFGANG - Flemingstr. 11, Hamburg 39, Germany - writes: "I am a yachtsman especially interested in the development of sailing ships and their present day possibilities. As far as modelbuilding is concerned, I favor the richly decorated ships of about 1700, but am planning to start a Gloucester schooner soon. I like cruising the Baltic with a club-owned yacht during my holidays."

SMITH, LEWIS L. - P. O. Box 517, Smithtown, L.I., New York - indicates he is interested in all things "nautical". Captain Thomas W. Sheridan, who introduced Mr. Smith to the N.R.G., writes that he is a yachtsman, collector of nautical books, and President of the "Salty Sixes" (Class '06, N. Y. Nautical School).

TATE, Professor VERNON D. - P. O. Box 386, Annapolis, Maryland - is the Head of the Library, U. S. Naval Academy, a member of long standing in the Washington Ship Model Society, and an adviser to the secretary of N.R.G. on nautical bibliography and similar matters.

VER VOORN, FLOYD, c/o Good News Productions, Chester Springs, Pennsylvania - advises, "As a landlubber, I am interested in ships and the sea as purely romantic adventure as well as in their relation to a recently activated interest in history, particularly early-American. I am also interested professionally as an artist, writer and editor of Christian films." Mr. Ver Voorn's period of research covers the 17th and 18th centuries. He was introduced by Willis L. Nye.

WARE, WILSON P. - Spring Lake Road, Sherman, Connecticut - writes that his interest embraces "A rather simple romantic interest which has led to making a few models, very slowly, over the years, in spare time." Mr. Ware indicates he is a model builder and artist - specializing in no particular period.

ROSTER ADJUSTMENTS

CALDWELL, Mrs. MARGARET N. - Route 1, East Sullivan, Maine (summer address)
HAY, CARL J. - 45 Central Street, West Concord, Massachusetts
HUYCKE, HAROLD D. - 220 Cardinal Road, Mill Valley, California
ISHERWOOD, Mrs. MARION G. - 1005 Seraid Avenue, Clearwater, Florida
JENKINS, KENNETH CLYDE - P. O. Box 3008, Westlake Station, Daly City, California
PERSEN, Captain KRISTEN AHNFELT - 138 Hawthorne St., Apt. 1, Larkspur, Calif.
SMALLEY, KENNETH C. - Cradle Skid Lane, Marblehead, Massachusetts

DECEASED

Captain Alfred Thomas Hunter, formerly of San Francisco, California.

The NAUTICAL RESEARCH JOURNAL is published by members of the NAUTICAL RESEARCH GUILD. Membership dues are $5.00 per annum and include all issues of the Journal published during the year, plus index of the current volune, plus copy of the latest Membership Roster. New members receive the numbers which have been previously issued in the current year.

Dues are payable January First of each year and are in force until receipt of the written resignation of the member. Opinions and assertions appearing in the Journal are the private ones of the writers. All rights are reserved and republication of material published should not be accomplished without the permission of the secretary.

The NAUTICAL RESEARCH GUILD is a non-profit and co-operative organization founded in 1928 by Harry D. Hamilton. All income of the Guild is used to defray publication and business expenses of the organization. No officer or member receives any monetary compensation for his contribution.

Secretary-Treasurer, James W. Harbin, Jr., 4110 Beall Street, Landover Hills, Md.
Membership Chairman, Willis L. Nye, 3038 Bridge Street, Hayward, California.

SECRETARY'S REPORT TO MEMBERS OF THE N.R.G.

The delay in making this first issue of the JOURNAL for 1958 available to you is regretted, but "available time" as secretary and editor remains critical, and though some relief has been promised within the next few months, no guarantees have or can be given. Meanwhile, your understanding of the problem is appreciated, and be assured that future issues of the JOURNAL will be released as soon as possible.

Taking a realistic view, the summer program calls for another annual issue of the revised Membership Roster as well as the second JOURNAL for 1958. N.R.G. members who have not made arrangements with the treasurer for 1958 dues will be so reminded by note. If a reply is not received within a reasonable time thereafter, the member's name will be dropped from the Membership Roster and mailing list. Resumption of active status thereafter can always be arranged with the Secretary-Treasurer at the convenience of the member.

In spite of publication delays of the NAUTICAL RESEARCH JOURNAL, the "Nautical Research Guild" continues to be a very much alive and active organization. The Secretary has been assured that there has been quite a volume of correspondence between members having similar interests, and he has had the pleasure of observing the activities of several affiliated organizations at first hand during the past six months. One memorable occasion was the Tenth Anniversary Dinner of the Richmond Ship Model Society, held last May, with a delegation of Washington Ship Model Society members present to help celebrate the event. Since many members of both organizations belong to N.R.G., a dual purpose was served in the discussions that followed the banquet. The momento of the evening, a framed print of the whaler NIGER by Jack Woodson (N.R.G.), President of R.S.M.S., was deeply appreciated by all who received them. (Note: The edition was limited to 35 prints and plates were destroyed.)

On the West Coast, the San Francisco Chapter of the N.R.G. continues to meet quarterly for dinner and an evening of nautically flavored entertainment and discussion. At one recent meeting Mrs. Edward Nelson showed more than 150 colored slides taken by her husband when he was a member of the crew on the Bar Pilot Boat that was stationed off the San Francisco Harbor Bar. The slides were interpreted by a professional narrator via tape recorder and amplifier. Mr. Nelson's pictures of the sea, sky and ships have been subject of many international photography awards. The summer meeting of the chapter will be joint with the San Francisco Model Yacht Club.

Another group activity that included participation by NRG members was the "charter bus" trip of the New York Ship Craft Club to Annapolis. This was a one-day

affair to view the Rogers Collection and other U.S. Naval exhibits at the Academy. Everyone present appeared to be well equipped with all shapes and sizes of cameras and the authorities at the Naval Academy Museum provided every facility possible to make the occasion a memorable one.

As we go to press, the Philadelphia Ship Model Society will have completed its annual dinner at the Engineers Club and the Washington Ship Model Society will be preparing to close activities for the summer with an annual dinner and another joint session with the "boys from Richmond". Incidentally, the W.S.M.S. is holding its 28th annual exhibition at the Arts & Industry Building of the U. S. National Museum, Smithsonian Institution from June 2 through June 29.

SHIP MODEL PHOTOGRAPH CONTEST

A most interesting proposal has been made by NRG member Arthur R. Sawers of Chicago, who wishes to initiate a friendly shipmodel contest to encourage shipmodel construction - and incidentally good model photography. Mr. Sawers suggested four divisions of models, namely; 1600-1720; 1720-1830; 1830-1910; and 1910 to date, with cash awards of $25 (provided by the sponsor) for the best model selected in each group. It was also suggested the contest could best be conducted with the understanding that no photographs would be returned, that three views would tell the story fairly well, that models should be of the non-working fully rigged vessels of the Western World, and participation limited to non-professional modelbuilders.

The Secretary offers the above digest for your consideration, suggestions and adoption. Much work must be done to select competent judges willing to carry on the necessary reviews, write reports and forward pictures to next judge, etc. If you are agreeable to the idea, the "go ahead" signal can be given to Mr. Sawers and his group, and further details announced in a future issue of the JOURNAL. The Secretary WILL NOT have any part in the contest except to forward inquiries to interested parties, and publish material pertinent to, and resulting from the contest. The contest, of course, will be limited to members of the Guild in good standing.

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SLOPCHEST

Roy Bragdon, Saxtons River, Vermont, offers the books: "From Forecastle to Cabin" by Capt. S. Samuela, Lauriat 1926 ($3); "Ocean Life in Old Sailing-Ship Days", Capt. J.D. Whidden, Little Brown & Co. 1908 ($3); and "China Clippers", B. Lubbock, Son & Ferguson 1950 ($4). He would like to swap any of the above for Paul E. Stevenson's "By Way of Cape Horn".

John R. Stevens, 45 Elm Street, East Haven, Connecticut, offers the following books: "The Shipwrights Trade" (1945) by Sir Wescott Abel($3); "Rigging of Ships 1600-1720" (1929), by R. C. Anderson; "Whale Ships & Whaling" (1938), by A.C. Cook ($10); "The Naval Expositer" (1750), by Thomas R. Blanckley ($25); "Ship Models" (1927), by August Koester ($15); "Old Ship Figureheads" (1925), by L.G.C. Laughton ($25); "Adventures by Sea" (1926), by Basil Lubbock ($9); "Marine Dictionary" (1779) by William Falconer ($25) and the 1815 edition of the Marine Dictionary ($35); "Dutch text on rigging, expanded on Lever", 1840, by Le Comte ($45); "Navires et Marines" by La Roerie ($10); "Instruction Nautica" by Palacio Garcio (reprint 1944 - $4); David Steel's "Sailmaking, 1794" ($10), and "Naval Architecture" 1812 (22 of 30 plates) ($60); William Sutherland's "Shipbuilding Unveiled", 1717 ($40) and "Shipbuilder's Assistant", 1794 ($40); "Sheet Anchor", 1858, by Darcy Lever ($30); and "Sailing Ships of War" 1925 by Sir Alan Moore($15).

Note: Arrangements to acquire items listed in the "Slopchest" must be made between members, and not through the Secretary. Articles offered for sale or for swap are listed as a service and courtesy to members of the Guild.